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Vol. XXX, No. 2 — A THRILLING PUBLICATION — June, 1947

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Young Thom Ra travels back to the hideous Venus-Earth war

FROM BEYOND THE STARS ..... Will F. Jenkins 82

Tommy Driscoll emulates a favorite hero when the Earth is in peril

YOU ARE FORBIDDEN! ..... Jerry Shelton 89

Jules Craig dares to fling aside the curtain of the future

Special Features

THE READER SPEAKS ..... The Editor 6

THE STORY BEHIND THE STORY ..... A Department 111

Cover Painting by Earle Bergey—Illustrating "The Boomerang Circuit"

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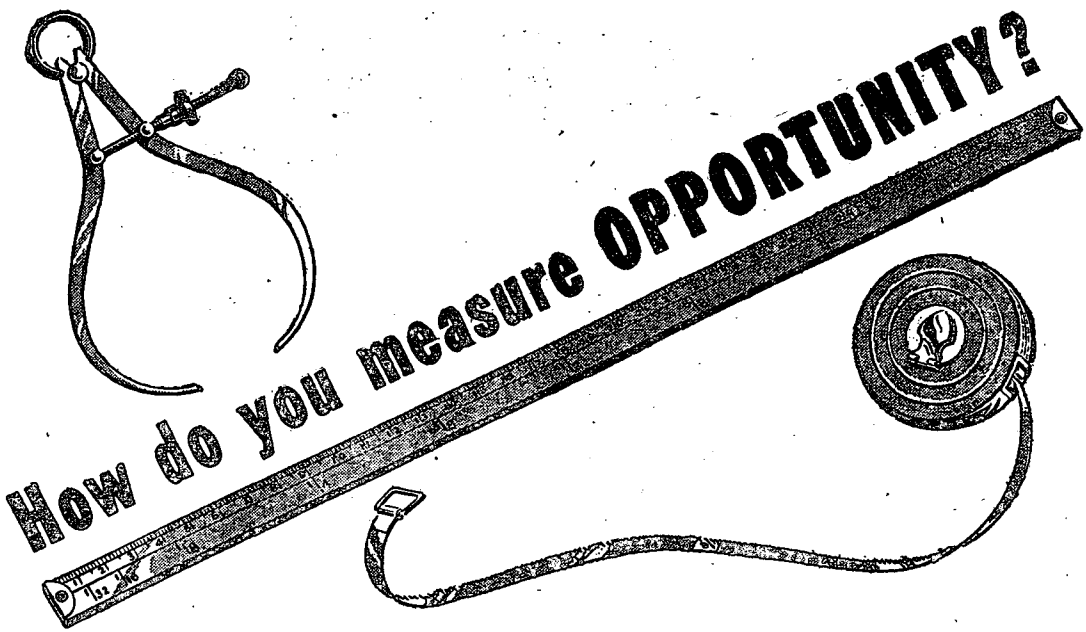

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A DEPARTMENT FOR SCIENCE FICTION FANS

SOMETHING NEW is about to be added to THRILLING WONDER STORIES—and it is a something which will, we hope, be of wide encouragement to science fiction fans and especially to science fiction amateur magazine (fanzine) editors and authors of the world over.

As veteran readers of TWS will readily recall, we endeavored for many years to encourage embryonic authors of STF through our Amateur Story Contest—in which we printed in each issue the best non-professional story received. Ultimately this contest, though well-supported for a considerable period, petered out.

The stories themselves were somehow *too* amateurish to give the contest much point when run in close juxtaposition with our other yarns. A few contest-winners, notably Wilm Carver, came through as pros. But for the most part, instead of developing able new writers the amateur contest stories merely came to mean that at least one tale in every issue was way below par for the course.

Our New Idea

So we killed the whole idea and have since been seeking to find some better way to give non-professional zealots the support they merit—and we believe that at last we have come up with it.

The basic flaw in the old scheme, apparently, lay in the fact that not only did the stories submitted receive strictly professional judgment but that, with very little explanation, they ran side by side with far more finished writings. Meagerly explained, they simply looked what they were—amateur jobs.

Well, we're changing all that. Instead of selecting the stories ourselves, we are now asking every amateur STF magazine editor or publisher to submit the story, poem or article that he feels is the best to have appeared in his magazine prior to 1947. Whether he makes the selection arbitrarily or submits it to a reader poll is up to his own judgment and policy.

Either way, we shall receive work which has won amateur approval—so that when we select the work or works to be used in each issue of TWS we shall not be bound by the occasionally limited prejudices of professionalism. Thus the most important part of the selection will already have been made by the very groups we hope to encourage. And the results should interest a much wider field than ever before in the amateur publishing activities of STF fandom.

We intend to run the winning selections in a special department with full credit to the amateur magazines and editors from which they stem. And we intend to accompany each with explanatory and critical editorial comment explaining the more bizarre characteristics of fan writing to the uninitiated general reader.

Thus we offer every amateur publisher and editor an opportunity to share in the full national and international circulation distribution TWS enjoys—and give him a chance to show his very best work. Naturally, the same applies to the authors whose work is picked. There will be cash rewards as well—but until we see what we draw in the grab bag we are thus inviting we'll have to withhold any definite commitments.

We are interested mainly in merit—be it a poem of only four lines or a story of several thousand words.

Since the year is already half gone, there will be but two or at most three chances remaining before 1948—but they should be whizzers with such a backlog to call upon. At any rate, we want to get started now!

Beginning with the February issue (our first for 1948) we shall ask amateur editors and publishers to submit only their pick of stories, articles or poems run during the current year of 1947—and from then on to stick to the preceding year. Since we are a bi-monthly magazine, this will give us a half dozen opportunities to select the pick of the preceding year's crop.

The Requirements

We shall list only a few requirements. They follow:

(1.) Each submission shall be submitted in printed form, in the amateur magazine in

(Continued on page 8)

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THE READER SPEAKS

(Continued from page 6)

which it was originally published.

(2.) Each submission shall be accompanied by a letter from the editor or publisher giving us something of the story behind his magazine as well as similar information about his submission and its author.

(3.) The submission of a work shall constitute permission for THRILLING WONDER STORIES to print or not as we see fit and to pay for, if printed, as we see fit.

And that's it, ladies and gentlemen! We feel that this, at last, should be a chance for amateur magazealots to win a small fraction of the renown they deserve—and it should work down the line to gain them more and better material for their own publications. So go to it—we'll be ready!

OUR NEXT ISSUE

WELL, the August issue of TWS will soon be here, so let's take a look at the crystal . . . and a highly encouraging look it is. We predict—and with no Drewpearson kickbacks to come—that it will be at least up to the three previous issue of 1947, which has been something of a high-water mark year to date!

And here are the bases of our prediction:

First place goes to the third long novelet of the great Bud Gregory series by William Fitzgerald, prize TWS discovery of this passing season. It is entitled THE DEADLY DUST and brings to a rousing climax the adventures of the erratic I-don't-know-how-I-do-it genius of the Kentucky mountains and his sorely harassed discoverer, Dr. David Murfree of the Bureau of Standards in Washington.

After his adventures in THE NAMELESS SOMETHING (see this issue) Bud again packs his wife, children and few worldly possessions into his amazing jaloppy and flees the terrors of regular work and civilization—just as the country and, ultimately, the world become subject to an attack of such slow and cumulative deadliness that few sense the reality of attack at all.

So once again Dr. Murfree has to mortgage his soul and seek out the eerie wizard in his new mountain retreat—and once again, having found him, has to bring virtual Gestapo pressure to bear to get him to go to work.

The results—but they must necessarily be reserved for the next issue. Suffice it to say that the third Bud Gregory is right in its own unique groove and then some.

Sharing top billing with the Fitzgerald opus is another long novelet, IN THE CARDS, by George O. Smith, whose well-established and lofty place among STF authors makes further introductory marks re

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the writer needless. He has come up with a typical, tense and intriguing Smithian twist in the tail of stuffed-shirt scientific logic.

In this case it is time that takes a kicking around, the essential problem being as follows—how would you, while in the midst of a battle royal with one of your girl or boy friends, like to have a very attractvie young man come butting in and give you orders to kiss and make up—because he is your as-yet and long-to-be unthought-of grandson?

Well that is what happens to Ellen Haynes and Jim Forrest, whose ultimate union not only means disavowing lifelong aims for each of them but, by a strange quirk of fate, veritable salvation for a universe which is apparently unthreatened. On the whole an annoying set-up for the couple involved.

Fortunately, it is a swell set-up for the reader—and one whose working out should provide him with a display of STF pyrotechnics he is not soon going to forget!

Finally, for our third top top-spot, we have one of Henry Kuttner's most powerful long stories, ATOMIC! This is the story of a Post-World-War Three Earth which is attempting to put to use the benefits it has received from wartime scientific speed-ups even while it fights desperately to keep under control the dire results spawned by its own destructive instincts.

It is a novel about a bombed-out New York City, carefully watched and guarded, where the very air and ground and water themselves seem to have united to create a monster mutation which makes the inhuman evil horrors of old-world mythology look like items that should use only rattles for weapons.

It is a story of involuntary human betrayal, of desperate battle against appalling odds, of human heroism greater than any shown in war. It is, we believe, a story you will not be able to leave unfinished.

Coupled with a group of the newer and better short stories we have been receiving of late, these three fine longer stories should do much to make the August issue of TWS a memorable one. And by then, if amateur magazine publishers are as prompt in response to our invitation as we hope they will be, the new department will be ready and waiting to give the magazine a touch of novelty. But come what may, it will be an issue well worth while.

LETTERS FROM READERS

HAVING thus tooted our own horn as loudly as innate modesty will permit us, it is time for us to turn to the mail-bag. Like the short stories, letters show increase in both quantity and quality (what is this—a trend?)

(Continued on page 97)

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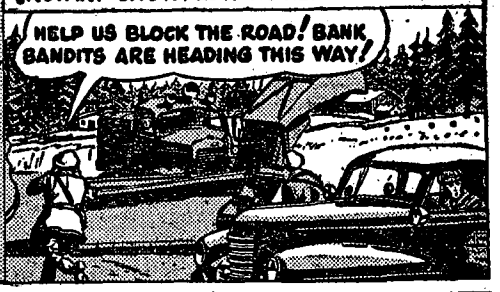
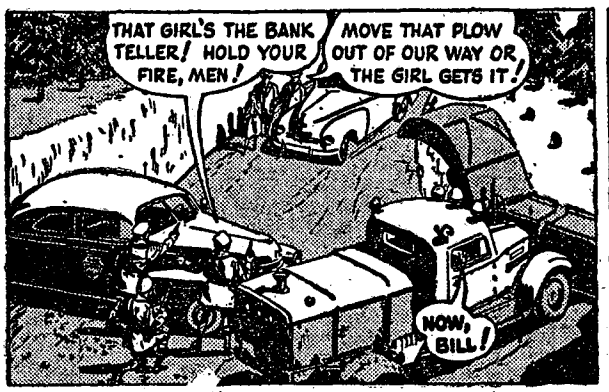
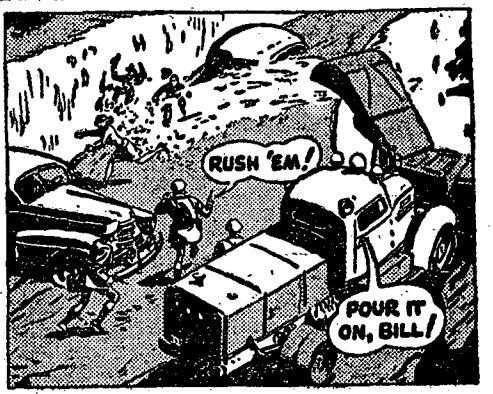
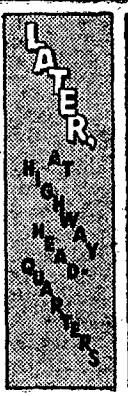
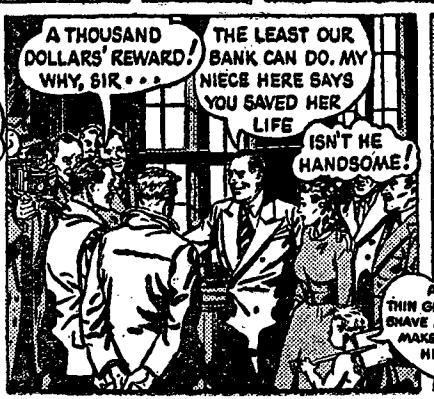
AFTER A NIGHT-LONG FIGHT AGAINST HEAVY DRIFTS TO CLEAR SKYTOP HIGHWAY, ART AND BILL ARE HEADING THEIR POWERFUL ROTARY SNOWPLOW HOMEWARD WHEN . .

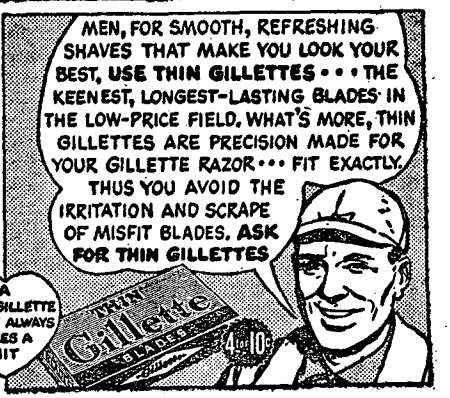









A THOUSAND DOLLARS' REWARD! WHY, SIR . . .
THE LEAST OUR BANK CAN DO. MY NIECE HERE SAYS YOU SAVED HER LIFE
ISN'T HE HANDSOME!
A THIN GILLETTE SHAVE ALWAYS MAKES A HIT


MEN, FOR SMOOTH, REFRESHING SHAVES THAT MAKE YOU LOOK YOUR BEST, USE THIN GILLETTES . . . THE KEENEST, LONGEST-LASTING BLADES IN THE LOW-PRICE FIELD. WHAT'S MORE, THIN GILLETTES ARE PRECISION MADE FOR YOUR GILLETTE RAZOR . . . FIT EXACTLY. THUS YOU AVOID THE IRRITATION AND SCRAPE OF MISFIT BLADES. ASK FOR THIN GILLETTES
THIN Gillette BLADES
4 for 10¢

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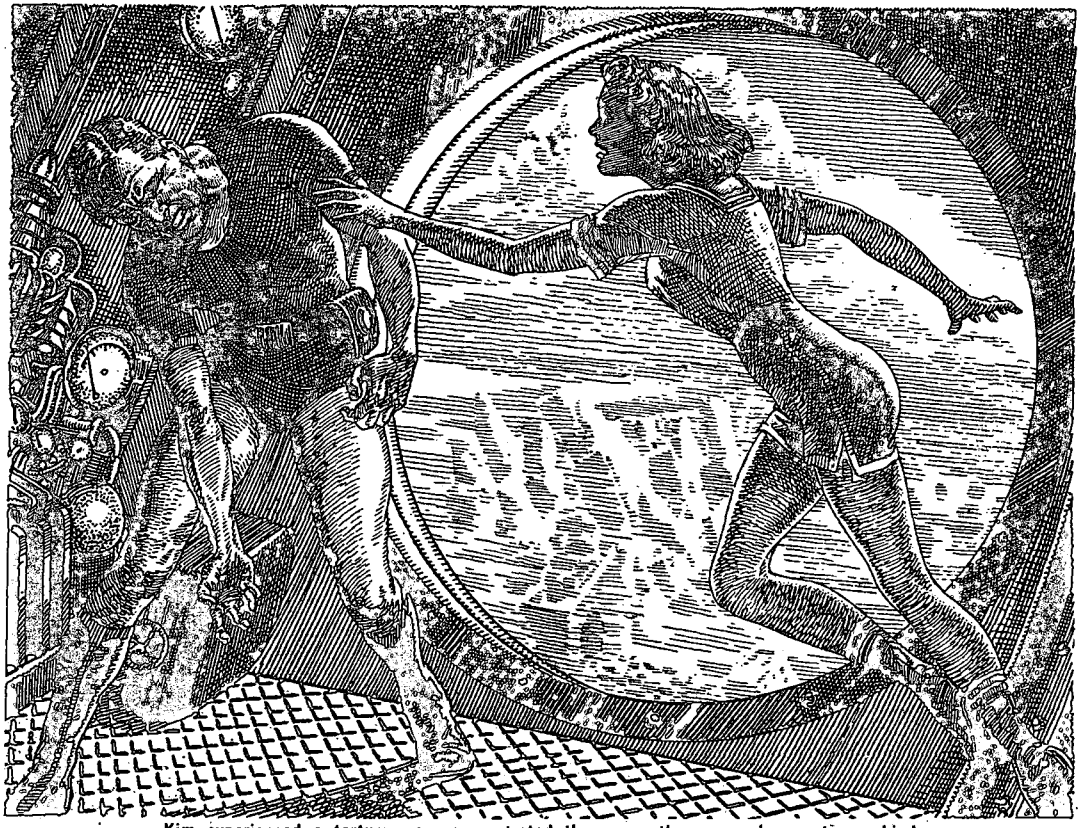

Kim experienced a torture more concentrated than any other agony known to mankind

The Boomerang Circuit

By MURRAY LEINSTER

When the prison world of Ades, outpost of freedom, vanishes into nothingness, Kim Rendell sets forth in the "Starshine" to find out why—and his discoveries make tyrants tremble!

CHAPTER I

Damaged Transmitter

KIM RENDELL had almost forgotten that he was ever a matter-transmitter technician. But then the matter-transmitter on Terranova ceased to operate and they called on him.

It happened just like that. One instant the wavering, silvery film seemed to stretch across the arch in the public square of the principal but still small settlement on the first planet to be colonized in the Second Galaxy. The film bulged, and momentarily seemed to form the outline of a human figure as a totally-reflecting, pulsating cocoon about a moving object. Then it broke like a bubble-film and a walking figure stepped unconcernedly out. Instantly the silvery

A COMPLETE KIM RENDELL NOVEL

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film was formed again behind it and another shape developed on the film's surface.

Only seconds before, these people and these objects had been on another planet in another island universe, across unthinkable parsecs of space. Now they were here. Bales and bundles and parcels of merchandise. Huge containers of foodstuffs—the colony on Terranova was still not completely self-sustaining—and drums of fuel for the spaceships busy mapping the new galaxy for the use of men, and more people, and a huge tank of viscous, opalescent plastic.

Then came a pretty girl, smiling brightly on her first appearance on a new planet, in a new universe, and crates of castings for more spaceships, and a family group with a pet zorag on a leash behind them, and a batch of cryptic pieces of machinery, and a man.

Then nothing. Without fuss, the silvery film ceased to be. One could look completely through the archway which was the matter-transmitter. One could see what was on the other side instead of a wavering, pulsating reflection of objects nearby. The last man to come through spoke unconcernedly over his shoulder, to someone he evidently believed just behind, but who was actually now separated from him by the abyss between island universes and some thousands of parsecs beyond.

Nobody paid any attention to matter-transmitters ordinarily. They had been in use for ten thousand years. All the commerce of the First Galaxy now moved through them. Spaceships had become obsolete, and the little *Starshine*—which was the first handiwork of man to cross the gulf to the Second Galaxy—had been a museum exhibit for nearly two hundred years before Kim Rendell smashed out of the museum in it, with Dona, and the two of them went roaming hopelessly among the ancient, decaying civilizations of man's first home in quest of a world in which they could live in freedom.

IT SEEMED a hopeless quest, at first. Every government was absolute, and hence every ruler had become tyrannical. And the very limitations of spaceships, which had caused their supplantation by matter-transmitters, had seemed to doom their quest to futility.

But Kim had adapted the principle of the transmitter to the drive of his ship, and with the increased speed and range they'd found freedom on the prison world of Ades, where alone there was no tyranny. And later Kim had crossed to this new galaxy, and set up a transmitter here—the one which had just failed—and the exiled rebels and recalcitrants of Ades had begun to move through to a new universe where, they swore, men should be forever free.*

They planned to have Ades remain a receiving-depot for more criminals and rebels who would increase the population of the new galaxy. There should be a constant flow of them. Governments which could not be overthrown existed everywhere. They were maintained by the device of the disciplinary circuit which enabled a tyrant or a group of oligarchs to administer intolerable torture to any individual they chose, wherever he might hide upon a planet's surface.

Revolt was utterly impossible. But there were some who revolted, nevertheless. And Ades had been a planet of hopeless exile to which such sturdy rebels could be sent as to a fate more mysterious and hence more terrible than death. On the whole, the newcomers were of the stuff of pioneers. The principal drawback was that so few women were rebels.

Events begun by the Empire of Sinab had solved even that problem of a superabundance of males, by reversing it. The Sinabian Empire had expanded by a policy of seemingly irresistible murder. By that policy, modified fighting-beams swept over a planet which was to be added to the empire, and in a single day slew every man and boy-child on it, leaving the women unharmed. And as time passed and years went by, when the women had grown numbed by their grief and then their despair that their race must die—why, then male colonists from Sinab appeared, and condescended to take the place of their victims.

They had planned to add Ades to their empire,† but the end was the exile of the men of Sinab to a planet and a universe so remote that men had not even conceived of such a distance before. And the widows of murdered men—not sharing that exile— accepted the wiveless men of Ades as their deliverers.

From that time until now, it had seemed that only triumphs could lie before the exiles. Duplicates of the *Starshine* roamed among the new and unnamed stars of the

*See "THE DISCIPLINARY CIRCUIT," *Thrilling Wonder Stories*, Winter Issue, 1946.
†See "THE MANLESS WORLDS," *Thrilling Wonder Stories*, February, 1947.

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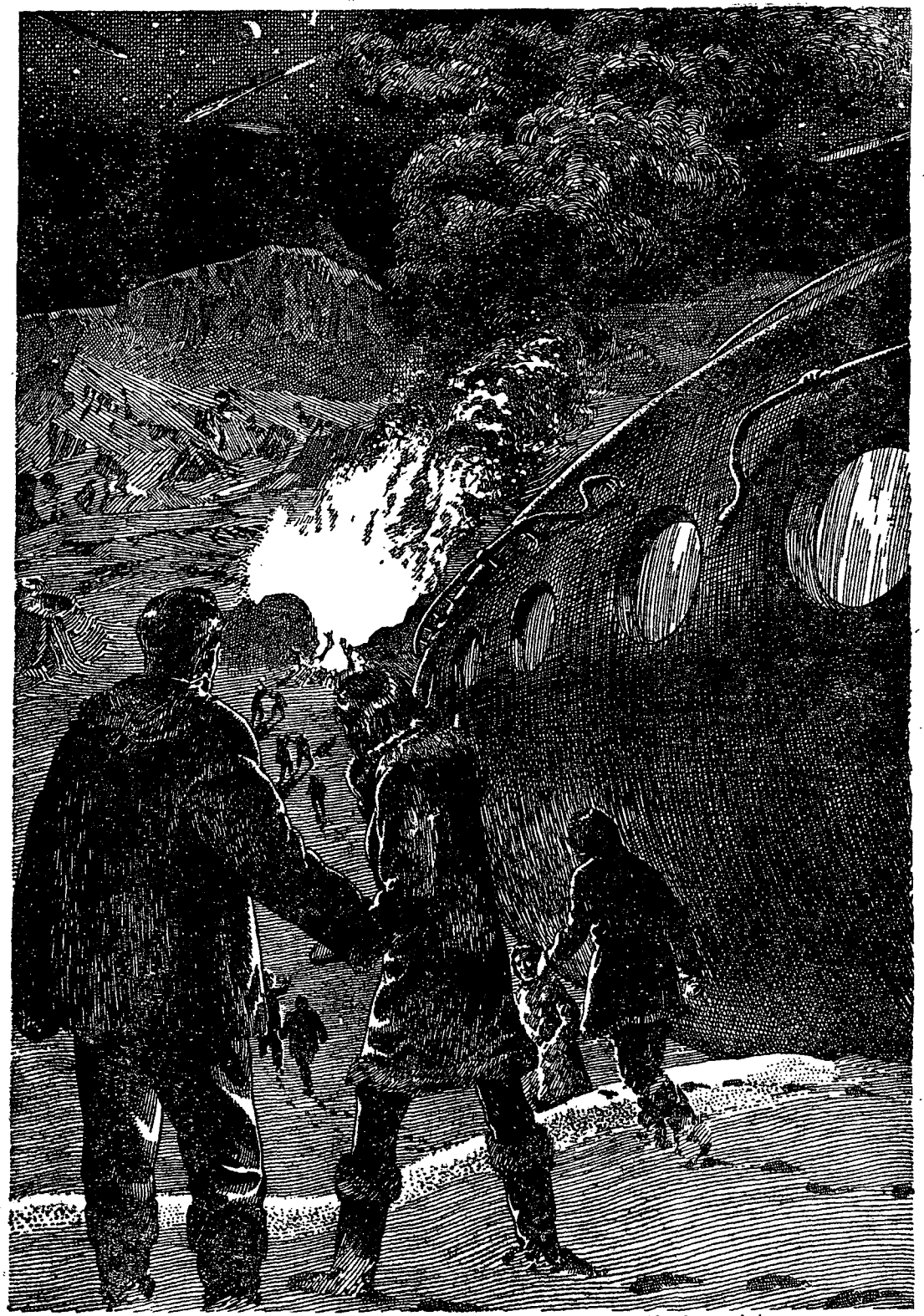

Abruptly the stars appeared overhead and Kim and Dona heard the rumble of an explosion

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Second Galaxy. Infinite opportunities lay ahead. Until now!

Now the matter-transmitter had ceased to operate. Five millions of human beings in the Second Galaxy were isolated from the First. Ades was the only planet in the home galaxy on which all men were criminals by definition, and hence were friendly to the people of the new settlements. Every single other planet—save the bewildered and almost manless planets which had been subject to Sinab—was a tyranny of one brutal variety or another.

Every other planet regarded the men of Ades as outlaws, rebels, and criminals. The people of Terranova, therefore, were not only cut off from the immigrants and supplies and the technical skills of Ades. They were necessarily isolated from the rest of the human race. And it could not be endured. And then, besides that, there were sixteen millions of people left on Ades, cut off from the hope that Terranova represented.

Kim Rendell was called on immediately. The Colony Organizer of Terranova, himself, went in person to confer and to bewail.

Kim Rendell was peacefully puttering with an unimportant small gadget when the Colony Organizer arrived. The house was something of a gem of polished plastic—Dona had designed it—and it stood on a hill with a view which faced the morning sun and the rising twin moons of Terranova.

The atmosphere flier descended, and Dona led the Organizer to the workshop in which Kim puttered. The Organizer had had half an hour in which to think of catastrophe. He was in a deplorable state when Kim looked up from the thing with which he was tinkering.

"Enter and welcome," he said cheerfully in the formal greeting. "I'm only amusing myself. But you look disturbed."

THE Colony Organizer bewailed the fact that there would be no more supplies from Ades. No more colonists. Technical information, urgently needed, could not be had. Supplies were called for for exploring parties, and new building-machines were desperately in demand, and the storage-reserves were depleted and could last only so long if no more came through.

"But," said Kim blankly. "Why shouldn't they come through?"

"The matter-transmitter's stopped working!" The Colony Organizer wrung his hands. "If they're still transmitting on Ades, think of the lives and the precious material that's being lost!"

"They aren't transmitting," said Kim. "A transmitter and a receiver are a unit. Both have to work for either one to operate—except in the very special case of a transmitter-drive ship. But it's queer. I'll come take a look."

He slipped into the conventional out-of-door garments. Dona had listened. Now she said a word or two to Kim, her expression concerned. Kim's expression darkened.

"That's what I'm afraid of," he told her. "A transmitter is too simple to break down. They can get detuned, but we made the pair for Ades and Terranova especially. Their tuning elements are set in solid plastite. They couldn't get out of tune!"

He picked up a small box. He tucked it under his arm.

"I'll be back," he told Dona heavily. "But I suspect you'd better pack."

He went out to the grounded flier. The Colony Organizer took it up and across the green-clad hills of Terranova. The vegetation of Terranova is extraordinarily flexible, and the green stuff below the flier swayed elaborately in the wind. The top of the forests bowed and bent in the form of billows and waves. The effect was that of an ocean which complacently remained upraised in hillocks and had no normal surface. It was not easy to get used to such things.

"I'm terribly worried," said the Organizer anxiously. "There is a tremendous shortage of textiles, and the ores we usually send back to balance our account are piling up."

"You're badly worried, eh?" said Kim grimly.

"Of course! How can we keep our economic system now?"

Kim made an angry noise.

"I'm a lot more worried than you are," he snapped. "Nothing should have stopped this particular pair of transmitters from working but the destruction of one or the other! This box in my pocket might tell me the answer, but I'm afraid to find out. I assure you that temporary surpluses and shortages of ores and textiles are the least of the things we have to worry about."

The little flier sped on, with the great, waving billows of the forest beneath it. On one hillock there was a clearing with a group of four plastic houses shining in the sunlight. They looked horribly lonely in the

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sea of green, but the population on Terranova was spread thin. Far over at the horizon there was another clearing. Sunlight glinted on water. A pleasure-pool. There was a sizable village about it. Half a dozen soarers spun and whirled lazily above. Kim said:

"The thing is that Ades and the planets left over after we handled Sinab are the only places in the whole First Galaxy where there are no disciplinary circuits. Ades is the only place where a man can spit in the eye of another man and the two of them settle it between themselves. There's a government of sorts, on Ades, as there is here, but there's no ruler. Also there's nobody who can strut around and make other men bow to him. A woman on Ades, and here, belongs to the man she wants to belong to. She can't be seized by some lordling for his own pleasure, and turned over to his guards and underlings when he's through with her."

"That's true," said the Colony Organizer, who was still worried. "But the transmitter—"

"Gossip of the admirable state of things on Ades has gone about," said Kim hardly. "Some of our young men appointed themselves missionaries and went roaming around the planets, spreading word that Ades wasn't a bad place. That if you were exiled to Ades you were lucky. They probably bragged that we whipped the Empire of Sinab in a fight."

AT THIS the mouth of the Organizer dropped open in astonishment.

"Of course, of course! The number of exiles arriving at Ades increased. It was excellent. We need people for the Second Galaxy, and people who earn exile are usually people with courage, willing to take risks for the sake of hope."

"Don't you realize that such things have been dangerous? When people on Markab Two began to hope?" Kim said impatiently. "When peasants on the planets of Allioth began to imagine that things might be better? When slaves on Utbeg began to tell each other in murmurs that there was a place where people weren't slaves? Don't you see that such things would alarm the rulers of such planets? How can people be held as slaves unless you keep them in despair?"

The Colony Organizer corrected his course a trifle. Far away the walls of the capital city of Terranova glinted in the sunlight.

"And there are the twenty-one planets which fell into our laps when we had to smash Sinab," said Kim. "Ades became the subject of dreams. Peasants and commoners think of it yearningly, as a sort of paradise. But kings and tyrants dream of it either as a nightmare which threatens the tranquility of their realms, or else as a very pretty bit of loot to be seized if possible. There are probably ten thousand royal courts where ambitious men rack their brains for some plausible way to wipe out Ades as a menace and take over our twenty-one planets for loot. Ades is already full of spies, sent there in the guise of exiles. There've been men found murdered after torture,—seized and tortured by spies hoping to find out the secrets by which we whipped Sinab. There's one bomb-crater on Ades already, where a bomb smuggled through the transmitter was set off in an effort to wipe out all the brains on the planet. It didn't, but it was bad."

CHAPTER II

Enemy Sabotage

SKILFULLY the Colony Organizer sent the flier into the long shallow glide that would land it in the planet capital city. There were only twenty thousand people in that city. It would rate as a village anywhere except on Ades, but it was the largest settlement on Terranova.

"Then you think," said the harassed Organizer, "that some outrage has been committed and the transmitter on Ades damaged —perhaps by another bomb?"

"I hope it's no worse than that," said Kim. "I don't know what I fear, but there are still sixteen million people on Ades, and some of them are very decent folk. In a little while I'll know if it's nothing important, or if it's bad. I could have found out back at home, but I wanted to hold on to hope."

His lips were tightly compressed. The flier landed. The two men got out and went along a yielding walk to the central square of the city.

Many persons had collected in the square, more people in that one spot than Kim had seen together for many years. Now at least a thousand men and women and children had gathered, and were standing motionless, looking at the tall arch of the transmitter.

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There would have been nothing extraordinary about the appearance of the arch to a man from past ages. It would have seemed to be quite commonplace—gracefully designed, to be sure, and with a smooth purity of line which the ancient artists only aspired to, but still not at all a remarkable object. But the throng of onlookers who stared at it, did so because they could look through it. That had never before been possible. It had been a matter-transmitter. Now it was only an arch. The people stared.

Kim went in the technician's door at the base of the arch. The local matter-technician greeted him with relief.

"I'm glad you have come, Kim Rendell," he said uneasily. "I can find nothing wrong. Every circuit is correct. Every contact is sound. But it simply does not work!"

"I'll see," said Kim. "I'm sure you are right, but I'll verify it. Yet I'm afraid I'm only postponing a test I should have made before."

He went over the test-panel, trying the various circuits. All checked up satisfactorily. He went behind the test-panel and switched a number of leads. He returned to the front and worked the panel again. The results were wildly at variance with the original readings, but Kim regarded them with an angry acceptance.

"I reversed some leads, just in case a checking instrument was out by the same amount as a circuit," he told the technician. "To be frank about it, I made sure you hadn't knocked out the transmitter on purpose. Such things have been done." Then he said grimly. "This one is all right. The transmitter on Ades is out of action. It not only doesn't work, but they haven't been able to fix it in—how long?"

"Two hours now," said the technician unhappily.

"Too long!" said Kim.

He unpacked his box. It was very small, a foot by a foot by a foot. There was a cone-shaped hole in one end which diminished to a small hole at the other end. Kim sweated a little.

"I should have tried this before," he said. "But I wanted to hope. With all the First Galaxy fearing and hating Ades, somebody would think of a way to do us damage, even without space-ships!"

He turned a tiny knob on the box, and looked through the hole. His lips tautened. He began to make tests. His face grew more and more drawn and sombre. At last he turned the little knob again, and nothing happened. His face went quite white.

"What is it?" asked the Colony Organizer.

Kim sat down, looking rather sick.

"It's bad," he said. Then he gestured toward the box. "When we were fighting Sinab, somebody worked out an idea for the remote control of ships. Beam control would be too slow. At a few million miles, the information the robot gathered would take seconds to get back to the control-board, and more seconds would be needed for the controling signals to get back to the robot. In terms of light-years, communications that way would be impossible."

KIM glanced at the Organizer who signified by a nod that he understood.

"If it took a year each way, there'd be two years between the robot's observation of something to be acted on," Kim continued. "And the signal that would make it act. So this man proposed very tiny matter-transmitters. One on the robot and one on the home planet. A solid object would receive all the information the robot's instruments gathered.

"The transmitter would send it back to the control-board at transmitter-speed, and the board would impress orders on it and send it to the robot again. It could shuttle across the width of a galaxy a hundred times a second, and make robot-control at any distance practical. A few of them were made, but not used. This is one of them.

"I had it for measuring the actual speed of transmitter-travel between here and Ades. We thought the distance would be enough for a good measurement. It wasn't. But this is a transmitter like the big one, and it has a mate on Ades, and its mate is a hemisphere away from Ades' main transmitter. And neither one works. Something's happened on Ades, that involves both hemispheres. And the transmitters couldn't have been knocked out by something that only killed people. It looks as if Ades may have been destroyed."

There was an instant's uncomprehending silence. Then the realization struck home. In all of human history no planet had ever been completely destroyed. Dozens, even hundreds, had been devastated, before wars came to an end by the discovery of a weapon too terrible to be used. Four had been depopulated by that weapon, the fighting beam.

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But never before had it even been imagined that a planet could be wiped out of existence.

"There are theoretic considerations," said Kim, dry-throated, "which make a material weapon like atomic explosive unthinkable. There are other considerations which make it certain that any immaterial weapon that could destroy a planet would have infinite speed and therefore infinite range. *If* Ades has been destroyed, all the human race, including us, must sooner or later be subject to those who control such a weapon."

Kim Rendell paused and cleared his throat. "If they start off by destroying the only world on which men are free, I don't think I like it. Now I must go back home. I'd better get over to the First Galaxy in the *Starshine* and find out what's happened."

* * * * *

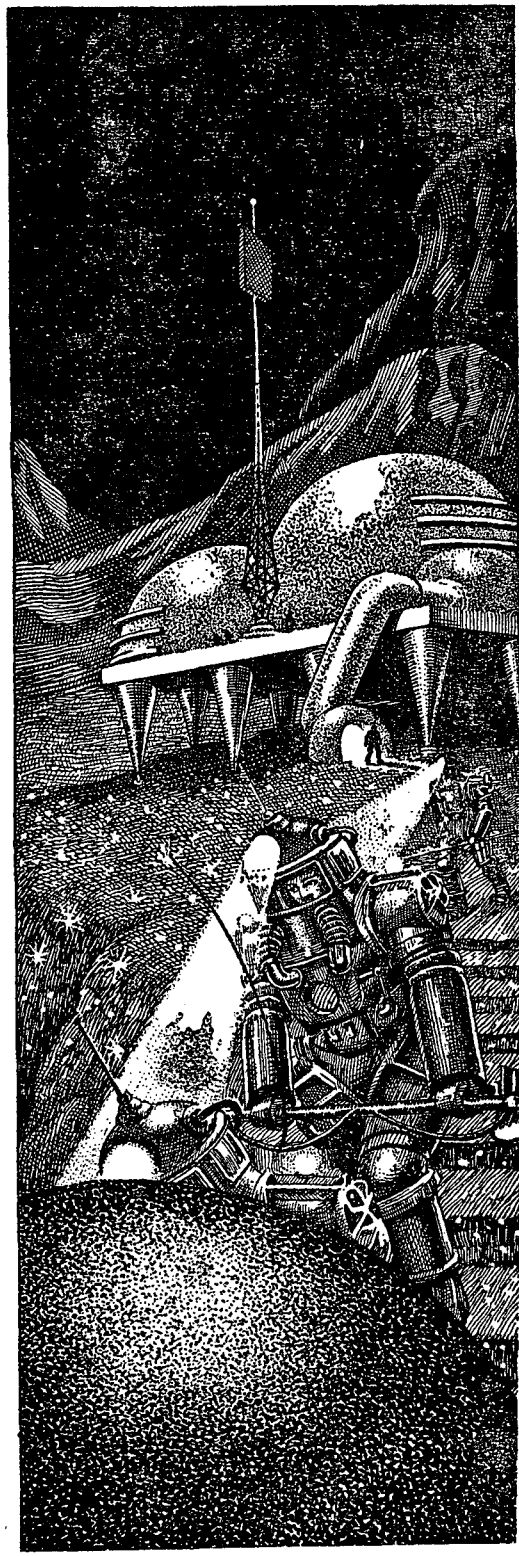
The thousand million suns of the First Galaxy swam in space, attended by their families of planets. Three hundred million worlds had been populated by the human race. For thirty thousand years the descendants of the people of Earth—that almost mythical first home of humanity—had spread through the vastness of what once had seemed to them the very cosmos itself.

In the older, long-settled planets, civilization rose to incredible heights of luxury and of pride, and then took the long dive down into decadence and futility while newer, fresher worlds still struggled upward from the status of frontier settlements.

But at long last humanity's task in the First Galaxy was ended. The last planet suitable for human occupancy had been mapped and colonized. The race had reached the limit of its growth. It had reached, too—or so it seemed—its highest possible point of development. Matter-transmitters conveyed parcels and persons instantly and easily from rim to rim of the galaxy.

Disciplinary circuits enforced the laws of planetary governments beyond any hope of evasion or defiance. There were impregnable defenses against attacks from space. There could be no war, there could be no revolt, there could be no successful crime—save by those people who controlled governments—and there could be no hope. So humanity settled back toward barbarism.

Perhaps it was inevitable that conquest



"They live on domed platforms of uranium glass and, when they go out to mine ore, they work in shielded space-suits."

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should again become possible, revolt conceivable, and crime once more feasible even to individuals, so that hope could return to men. And perhaps it was the most natural thing imaginable that hope first sprang from the prison world of Ades.

WHISPERS spread from planet to planet. Ades, to which all rebels and nonconformists had been banished in hopeless exile, was no longer a symbol for isolation and despair. Its citizens—if criminals could be citizens anywhere—had revived the art of space-travel by means of ships.

The rest of the galaxy had abandoned space-ships long ago as antiquities. Matter-transmitters far surpassed them. But Ades had revived them and fought a war with the Empire of Sinab, and won it, and twenty-one planets with all their cities and machines had fallen to them. But the men of Sinab had been sent to an unimaginable fate, leaving wives and daughters behind. The fact that the women of the Sinabian Empire were mostly the widows of men massacred for the Empire's spread was not clearly told in the rumors which ran about among the world.

If you became a criminal and were exiled to Ades, you were lucky. There were not enough men on Ades to accomplish the high triumphs awaiting them on every hand. There was hope for any man who dared to become a rebel. Exile to Ades was the most fortunate of adventures instead of the most dreadful of fates.

Those whispers were fascinating, but they were seditious. The oligarchs and tyrants and despots and politicians who ruled their planets by the threat of the disciplinary circuit, found this new state of affairs deplorable. Populations grew restive. There was actually hope among the common people, who could be subjected to unbearable torment by the mere pressure of a button. And of course hope could not be permitted. Allow the populace to hope, and it would aspire to justice. Grant it justice and it might look for liberty! Something had to be done!

So something was done. Many things were done. Royal courts debated the question, alike of the danger and of possible loot in the empire to which Ades had fallen heir. And in consequence the despots had acted.

The *Starshine* winked into existence near the sun which had been the luminary of Ades. It was a small cold sun, and Ades had been its only planet. The *Starshine* had made the journey from Terranova in four leaps, of which the first was the monstrous one from the Second Galaxy to the First. Accuracy of aim could not be expected over such an expanse.

The little ship had come out of its first leap near that preposterous group of the blue-white suns of Dheen, whose complicated orbits about each other still puzzled mathematicians. And Kim had come to the sector of the galaxy he desired on his second leap, and to the star-cluster in the third, and the fourth brought him to the small sun he looked for.

But space was empty about it. A sun without planets is a rarity so strange that it is almost impossible. This sun had possessed Ades. Nevertheless Kim searched for Ades. He found nothing. He searched for debris of an exploded planet. He found nothing. He set cameras to photograph all the cosmos about him, and drove the *Starshine* at highest interplanetary speed for twelve hours. Then he looked at the plates.

In that twelve hours the space-ship had driven some hundreds of thousands of miles. Even nearby stars at distances of light-years, would not have their angles change appreciably, and so would show upon the plates as definite, tiny dots. But any planet or any debris within a thousand million miles would make a streak instead of a dot upon the photographic plate.

There was nothing. Ades had vanished.

He aimed for the star Khiv and flashed to its vicinity. The banded planet Khiv Five swam sedately in emptiness. Kim drove for it, at first on mere overdrive, and then on the interplanetary drive used for rising from and landing on the surface of worlds. He landed on Khiv Five.

Women looked at him strangely. A space-ship which landed on Khiv Five—or anywhere else, for that matter—must certainly come from Ades, but ships were not commonplace sights. Kim was no commonplace sight, either. Six years before, the men on Khiv Five had died in one rotation of the planet. Every man and boy was murdered by the killing-beams of the now defunct Sinabian Empire. Now there were only women, save for the very few men who had migrated to it in quest of wives, and had remained to rear families.

The population of Khiv Five was overwhelmingly female.

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KIM found his way to the governing center of the capital city. Dona walked with him through the city streets. There were women everywhere. They turned to stare at Kim. They looked at Dona with veiled eyes.

Long years on an exclusively feminine world does strange things to psychology. There were women wearing the badges of mourning for husbands dead more than half a decade.

In a sense it was a dramatization of their loss, because all women, everywhere, take a melancholy pleasure in the display of their unhappiness. But in part to boast of grief for a lost husband was an excuse for not having captured one of the few men who had arrived since the mass murder. As a matter of fact, Kim did not see a single man in the capital city of Khiv Five, but its streets swarmed with women.

He asked for the head of the planet government, and at long last found an untidy woman at a desk. He asked what was known of Ades.

"I was on Terranova," he explained. "The matter-transmitter went off and it did not come back on. I came back by space-ship to find out about it, and went to where Ades should have been. I'm Kim Rendell, and I used to be a matter-transmitter technician. I thought I might repair the one on Ades if it needed repairing. But I could find no planet circling Ades' sun."

The woman regarded him with what was almost hostility.

"Kim Rendell," she said. "I've heard of you. You are a very famous man. But we women on Khiv Five can do without men!"

"No doubt," Kim said patiently. "But has there been any word of Ades?"

"We are not interested in Ades," she said angrily. "We can do without Ades."

"But I'm interested in Ades," said Kim. "And after all, it was Ades which punished the murderers of the men of Khiv Five. A certain amount of gratitude is indicated."

"Gratitude!" said the untidy woman harshly. "We'd have been grateful if you men of Ades had turned those Sinabians over to us! We'd have killed them every one—slowly!"

"But the point is," said Kim, "that something has happened to Ades. It might happen to Khiv Five. If we can find out what it was, we'll take steps so it won't happen again."

"Just leave us alone!" said the untidy woman fiercely. "We can get along without men or Ades or anything else. Go away!"

CHAPTER III

Dangerous Trip

DONA plucked at Kim's arm. He turned, seething, and went out. Outside he vented his bitterness.

"I thought men were crazy!" he said. "If she's the head of the planet government, I pity the planet."

"She could talk to another woman quite rationally," Dona said with satisfaction. "But she's had to persuade herself that she hates me, and you had me with you, and I'm prettier than she is, Kim, and I have you. So she couldn't talk to you."

"But she's unreasonable," Kim said stubbornly.

"We'll go back to the ship," said Dona brightly. "I'll lock you in it and then go find out what we want to know."

She smiled comfortably all the way back to the *Starshine*. But the staring women made Kim acutely uncomfortable. When he was safely inside the ship, he wiped perspiration from his forehead.

"I wouldn't want to live on this planet!" he said feverishly.

"I wouldn't want you to," said Dona. "Stay inside, darling. You'd better not even show yourself at a vision-port."

"Heaven forbid!" said Kim.

Dona went out. Kim paced up and down the living quarters of the ship. There was something in the back of his mind that would not quite come out. The disappearance of Ades was impossible. Men had conquered one galaxy and now started on a second, but never yet had they destroyed a planet. Never yet had they even moved one. But nevertheless, only thirty-six hours ago the planet Ades had revolved about its sun and men and women had strolled into its matter-transmitter with no hint of danger, and between two seconds something had happened.

Even had the planet been shattered into dust, its remnants should have been discoverable. And surely a device which could destroy a planet would have had some preliminary testings and the galaxy would have heard of its existence! This thing that had happened was inconceivable! On the basis of the photographs, Ades had not only been

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destroyed, but the quintillions of tons of its substance had been removed so far that sunlight shining upon them did not light them enough for photography. Which simply could not be.

Kim wrestled with the problem while Dona went about in the world of women. There was something odd about her in the eyes of women of Khiv Five. Their faces were unlike the faces of the women of a normal world. On a world with men and women, all women wear masks. Their thoughts are unreadable. But where there are no men, masks are useless. The women of Khiv Five saw plainly that Dona was unlike them, but they were willing to talk to her.

She came back to the *Starshine* as Kim reached a state of complete bewilderment. Ades could not have been destroyed. But it had vanished. Even if shattered, its fragments could not have been moved so far or so fast that they could no longer be detected. But they were undiscoverable. The thing was impossible on any scale of power conceivable for humans to use. But it had happened.

So Kim paced back and forth and bit his nails until Dona returned.

"We can take off, Kim," she said quietly.

She locked the inner airlock door as if shutting out something. She twisted the fastening extra tight. Her face was pale.

"What about Ades?" asked Kim.

"They had matter-transmission to it from here, too," said Dona. "You remember, the original transmitter on Ades was one-way only. It would receive but not send. Some new ones were built after the war with Sinabia, though. And this planet's communication with Ades cut off just when ours did, thirty-six hours ago. None of the other twenty planets has communication with it either. Something happened, and on the instant everything stopped."

"What caused it?" Kim asked, but Dona paid no attention.

"Take off, Kim," she said. "Men are marching out of the matter-transmitter. Marching, I said, Kim! Armed men, marching as soldiers, with machine-mounted heavy weapons. Somebody knows Ades can't protect its own any more, and invaders must be crowding in for the spoils. I'm—afraid, Kim, that Ades has been destroyed and our planets are part of a tyrant's empire now."

LATER, the *Starshine* swooped down from the blue toward the matter-transmitter on Khiv Five. Serried ranks of marching figures were tramping out of the transmitter's silvery, wavering film. In strict geometric rows they marched, looking neither to the right nor to the left. They were a glittering stream, moving rhythmically in unison, proceeding to join an already-arrived mass of armed men already drawn up in impressive array.

Racing toward the high arch of the transmitter with air screaming about the *Starshine's* hull, Kim saw grimly that the figures were soldiers, as Dona had said. He had never before seen a soldier in actual life, but pictures and histories had made them familiar enough.

These were figures out of the unthinkably remote past. They wore helmets of polished metal. They glittered with shining orichalc and chromium. The bright small flashes of faceted corundum—synthetic sapphire in all the shades from blue-white to ruby—shone from their identical costumes and equipment. They were barbarous in their splendor, and strange in the precision and unison of their movements, which was like nothing so much as the antics of girl precision dancers, without the extravagance of the dancers' gestures.

The *Starshine* dipped lower. It shot along a canyon-like open way between buildings. The matter-transmitter was upon a hill within the city and the ship was now lower than the transmitter and the heads of the soldiers who still tramped out of the archway in a scintillating stream.

Kim raged. Soldiers were an absurdity on top of a catastrophe. Something had erased the planet Ades from its orbit around a lonely sun. That bespoke science and intelligence beyond anything dreamed of hitherto. But soldiers marching like dancing-girls, bedecked with jewels and polished metal like the women of the pleasure-world of Dite—

This military display was pure childishness!

"Our pressure-wave'll topple them," said Kim savagely. "At least we'll smash the transmitter."

There was a monstrous roaring noise. The *Starshine,* which had flashed through intergalactic space at speeds no science was yet able to measure, roared between tall buildings in atmosphere. Wind whirled and howled past its hull. It dived forward toward the soldiers.

There was one instant when the ship was

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barely yards above the gaping faces of startled, barbarously accoutred troopers. The following spreading pressure-wave of the ship's faster-than-sound movement spread out on every side like a three-dimensional wake. It toppled the soldiers as it hit. They went down in unison, in a wildly-waving, light-flashing tangle of waving arms and legs and savage weapons.

But Kim saw, too, squat and bell-mouthed instruments on wheels, in the act of swinging to bear upon him. One bore on the *Starshine*. It was impossible to stop or swerve the ship. There was yet another fraction of a second of kaleidoscopic confusion, of momentary glimpses of incredibly antique and childish pomp.

And then anguish struck.

It was the hellish torment of a fighting-beam, more concentrated and more horrible than any other agony known to mankind. For the infinitesimal fraction of an instant Kim experienced it to the full. Then there was nothingness.

There was no sound. There was no planet. There was no sunlight on tall and stately structures built by men long murdered from the skies. The vision-ports showed remote and peaceful suns and all the tranquil glory of interstellar space. The *Starshine* floated in emptiness.

It was, of course, the result of that very small device that Kim had built into the *Starshine* before even the invention of the transmitter-drive. It was a relay which flung on faster-than-light drive the instant fighting-beams struck any living body in the ship. The *Starshine* had been thrown into full interstellar drive while still in atmosphere.

It had plunged upward—along the line of its aiming—through the air. The result of its passage to Khiv Five could only be guessed at, but in even the unthinkably minute part of a second it remained in air, the ship's outside temperatures had risen two hundred degrees. Moving at multiples of the speed of light, it must have created an instantaneous flash of literally stellar heat by the mere compression of air before it.

KIM was sick and shaken by the agony which would have killed him had it lasted as long as the hundredth of a second. But Dona stared at him.

"Kim—what— Oh!"

She ran to him. The beam had not touched her. So close to the projector, it had been narrow, no more than a yard across. It had struck Kim and missed Dona.

"Oh, my poor Kim!"

He grimaced.

"Forget it," he said, breathing hard. "We've both had it before, but not as bad as this. It was a mobile fighting-beam projector. I imagine they'll think we burned up in a flash of lightning. I hope there were X-rays for them to enjoy."

For a long time Kim Rendell sat still, with his eyes closed. The dosage of the fighting-beam had been greater than they had ever experienced together, though. It left him weak and sick.

"Funny," he said presently. "Barbarous enough to have soldiers with decorative uniforms and shiny dingle-dangles on them, and modern enough to have fighting-beam projectors, and a weapon that's wiped Ades out of space. We've got to find out who they are, Dona, and where they came from. They've something quite new."

"I wonder," said Dona. But she still looked at Kim with troubled eyes.

"Eh?"

[*Turn page*]

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"If it's new," said Dona. "If it's a weapon. Even if—if Ades is destroyed."

Kim stared at her.

"Now, what do you mean by that?"

"I don't quite know," admitted Dona. "I say things, and you turn them over in your head, and something quite new comes out. I told you a story about a dust-grain, once, and you made the transmitter-drive that took us to Ades in the first place and made everything else possible afterward."

"*Hmmm,*" said Kim meditatively. "If it's new. If it's a weapon. If Ades is destroyed. Why did you think of those three things?"

"You said no planet had ever been destroyed," she told him. "If anybody could think of a way to do such a thing, you could. And when Sinab had to be fought, and there weren't any weapons, you worked out a way to conquer them with things that certainly weren't weapons. Just broadcasters of the disciplinary circuit field. So I wondered if what they used was a weapon. Of course if it wasn't a weapon, it was probably something that had been used before for some other purpose, and it wouldn't be new."

"I've got to think about that," said Kim. He cogitated for a moment. "Yes, I definitely have to think about that."

Then he stood up.

"We'll try to identify these gentry first. Then we'll go to another of the twenty-one planets."

CHAPTER IV

Despots Take Over

HE TOOK his observations and swung the little ship about. He adjusted the radiation-switch to throw off the transmitter-drive on near approach to a sun. He aimed for the star Thom. Its fourth planet had been subjugated to the Empire of Sinab ten years before, and freed by the men of Sinab six years since.

The *Starshine* winked into being some twenty million miles from it, and two hundred million from the star. Kim looked annoyed, and then glanced at the relay and adjusted it again. He pointed the *Starshine* close to the planet's disk. He pressed the transmitter-drive button. Instantly the ship was within mere thousands of miles of the planet.

"Nice!" Kim was pleased. "Saves a lot of overdrive juggling. Those horrible fighter-beams seem to make one think more clearly. Dona, get us down to the night-side while I try to work something out. Don't ground. Just drop into atmosphere enough to pick up any broadcasts."

She took his place at the controls. He got out his writing-materials and a stylus and began busily to sketch and to calculate. Dona drove the ship to atmosphere on the dark side of Thom Four, not too far from the sunset's rim. In the earlier night hours, on a given continent, the broadcasts should be greater in number.

Communicator-bands murmured in soprano. Thom Four was more than ninety-five per cent female, too. Kim worked on. After a long time a speaker suddenly emitted a blast of martial music. Until now the broadcast programs had gone unheeded by both Kim and Dona, because from each wave-band only women's voices had come out, and only women's music. The sound of brazen horns was something new. Dona smiled at Kim and turned up the volume.

A man's voice said pompously:

"To the People of Thom Four, greeting!

"Whereas His Most Gracious Majesty, Elim the Fortieth, of high and noble lineage, has heard with distress of the misfortunes of the people of the planet Thom Four, of the injuries they have suffered at the hands of enemies, and of their present distressful state, and

"Whereas, His Most Gracious Majesty, Elim the Fortieth, of high and noble lineage, is moved to extend his protection to all well-disposed persons in need of a gallant and potent protector;

"Therefore His Most Gracious Majesty, Elim the Fortieth, of high and noble lineage, has commanded his loyal and courageous troops to occupy the said planet Thom Four, to defend it against all enemies whatsoever, and to extend to its people all the benefits of his reign.

"Given at his Palace of Gornith, on the second day of the tenth month of the sixteenth year of his reign, and signed by His Most Gracious Majesty, Elim the Fortieth, of high and noble lineage."

The voice stopped. There was another blare of martial music. The broadcast ended. Ten minutes later, on another wavelength, the same proclamation was repeated. That broadcast stopped too. Five minutes later

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came still another broadcast. And so on and so on. At long last there was but a single wavelength coming into the communicators. It was a broadcast of a drama with only female characters, and in which there was no reference to the fact that the human race normally includes two sexes. It was highly emotional and it was very strange indeed.

Then a pompous male voice read the silly proclamation and the broadcast cut off.

"The question," said Kim," is whether I'd better try to catch a soldier and make him tell us where Gornith is and what planet is ruled by Elim the Fortieth of high and noble lineage. I think I'd better find out."

"Darling," said Dona," I'm not afraid of soldiers bothering you, but I certainly won't let you venture out on a planet full of women. And there's something else."

"What?"

"There are twenty-one planets which Ades used to protect. What planetary ruler could send troops to occupy twenty-one other planets? Do you think this King Elim the Fortieth has tried to seize all of them, or do you think he arranged a coöperative steal with the rulers of other planets, and an arrangement for them all to help protect each other? Hadn't we better make sure?"

KIM looked up at her from the desk where he worked.

"You're an uncomfortably brainy woman, Dona," he said drily. "Do you think you could find Sinab? Sinab Two was the capital planet of the empire we had to take over."

Dona looked carefully on a star-chart. Kim went back to his task. He had drawn, very carefully, an electronic circuit. Now he began to simplify it. He frowned from time to time, though, and by his expression was thinking of something else than the meticulous placing of symbols on paper.

It was symptomatic of his confidence in Dona, though, that he remained absorbed while she worked the ship. Presently there were mutterings in the speakers. Dona had navigated to another solar system and entered the atmosphere of another planet.

"Listen, Kim!" she said suddenly.

From a communicator blared a heavy male voice.

"People of Sinab Two!" the voice said. "You are freed from the tyranny of the criminals of Ades.

"From this time forth, Sinab Two is under the protection of the Dynast of Tabor, whose mercy to the meek, justice to the just, and wrath toward the evil-doer is known among all men.

"People of Sinab Two! The soldiers now pouring in to defend you are to be received submissively. You will honor all requisitions for food, lodgings, and supplies. Such persons as have hitherto exercised public office will surrender their authority to the officials appointed by the Dynast to replace them.

"For your protection, absolute obedience is essential. Persons seeking to prevent the protection of Sinab Two by the troops of the Dynast of Tabor will be summarily dealt with. They can expect no mercy.

"People of Sinab Two! You are freed from the tyranny of the criminals of Ades!"

"So Elim the Fortieth, of high and noble lineage, has a competitor," Kim said grimly. "The Dynast of Tabor, eh? But there are twenty-one planets that used to belong to Sinab. I'm afraid we'll have to check further."

They did. While Kim scowlingly labored over the drawing of a new device, Dona drove the *Starshine* to six worlds in succession. And four of the six worlds had been taken over by the Sardathian League, by King Ulbert of Arth, by the Emperor and Council of the Republic of Sind—which was a remarkable item—and by the Imperator of Donet. On the last two worlds there was confusion. On one the population was sternly told by one set of voices that it now owed allegiance to Queen Amritha of Megar, and by another set that King Jan of Pirn would shortly throw out the Megarian invaders and protect them forever. On the sixth planet there were four armies proclaiming the exclusive nobility of their intentions.

"That's enough, Dona," Kim said in a tired voice. "Ades vanished or was destroyed, and instantly thereafter gracious majesties and dynasts and imperators and such vultures pounced on the planets we'd freed. But I'd like to know how they made sure it was safe to pounce!"

Dona punched buttons on the *Starshine's* control-board. The ship lifted. The great black mass which was the night-side of the last planet faded behind and the *Starshine* drove on into space. And Dona turned back to Kim from her post at the controls.

"Now what?"

Kim stared at nothing, his features somber.

"It's bad," he said sourly. "There's the gang on Terranova. They're fair game if they

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land on any planet in the whole First Galaxy —and Terranova isn't self-sustaining yet. They'll starve if they stay isolated. There are the people on Ades. Sixteen millions of them. Not a big population for a planet, but a lot of people to be murdered so a few princelings can feast on the leavings of Sinab's empire.

"There are all the people who'd started to dream because Ades had come to mean hope. And there are all the people in generations to come who'd like to dream of hope and now won't be able to, and there are all the nasty little surprise-attacks and treacheries which will be carried out by matter-transmitters, now that these gentry of high and noble lineage have been able to snatch some loot for themselves. It's pretty much of a mess, Dona."

DONA gave an impatient toss of her head. "You're not responsible for it, Kim," she protested.

"Maybe I should simply concentrate on finding a solution for Terranova, eh? Let decency as something to fight for go by the board and be strictly practical?"

"You shouldn't try to take all the problems of two galaxies on your shoulders," said Dona.

Kim shook his head impatiently.

"Look!" he said in vexation. "There's some way out of the mess! I just contrived a way to make a very desirable change in all the governments of the First Galaxy, given time. It was one of those problems that seem too big to handle, but it worked out very easily. But I absolutely can't think of the ghost of an idea of how to find a friendly world for Terranova!"

Dona waited.

"It occurs to me that I haven't slept for forty hours," Kim said. "I doubt that you've done any better. I think we should go to bed. There's one puzzle on which all the rest is based, and it's got me. What the devil happened to Ades? There's a whole planet, seven thousand miles in diameter, vanished as if it had never been. Maybe after some sleep I'll be able to work it out. Let's go to sleep!"

The space-ship *Starshine* drove on through emptiness at mere interplanetary speed, its meteor-repellers ceaselessly searching space for any sign of danger. But there was no danger. In the midst of space, between the stars, there was safety. Only where men were was there death.

The ship swam in the void, no lights showing in any of its ports.

Then, in the midst of the darkness inside, Kim sat up in his bunk.

"But hang it, Ades *couldn't* be destroyed," he cried, in exasperation.

CHAPTER V

Industrial World

PLANET SPICUS FIVE was an industrial world. According to the prevailing opinion in the best circles, its prosperity was due to an ample and adequate supply of raw materials, plus a skilled and thrifty population. There were sixteen matter-transmitters on the planet, and their silvery films were never still.

From abecedaria for infants to zyolites (synthetic) for industrial use, its products ran in endless streams to the transmitters, and the other products and raw materials obtained in exchange came out in streams no less continuous. The industrial area covered a continent of sprawling rectangular buildings designed for the ultimate of efficiency, with living-areas for the workmen spreading out between.

The *Starshine* descended through morning sunlight. Kim, newly shaved and rested, forgot to yawn as he stared through the vision-ports at the endless vista of structures made with a deliberate lack of grace. From a hundred-mile height they could be seen everywhere to north and south, to the eastward where it was already close to midday, and to where shadows beyond the dawn hid them. Even from that altitude they were no mere specks between the cloud-masses. They were definite shapes, each one a unit.

The ship went down and down and down. Kim felt uncomfortable and realized why. He spoke drily.

"I don't suppose we'll ever land on any new planet without being ready to wince from a fighting-beam and find ourselves snatched to hell-and-gone away."

Dona did not answer. She gazed at the industrial plants as they swelled in size with the *Starshine's* descent. Buildings two miles to a side were commonplace. Great rectangles three and even four miles long showed here and there. And there were at least half a dozen buildings, plainly factory units, which were more than ten miles in

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extent on each of their ground dimensions. When the *Starshine* was below the clouds, Dona focussed the electron telescope on one of them and gestured to call Kim's attention to the sight.

This factory building enclosed great quadrangles, with gigantic courtyards to allow—perhaps—of light. And within the courtyards were dwelling-units for workmen. The telescope showed them plainly. Workmen in factories like this would have no need and little opportunity ever to go beyond the limits of their place of employment. The factory in which they labored would confront them on every hand, at every instant of their life from birth until death.

"That's something I don't like, without even asking questions about it," said Kim.

He took the controls. The *Starshine* dived. He remembered to flick on the communicators. A droning filled the interior of the space-ship. Dona looked puzzled and tuned in. A male voice mumbled swiftly and without intonation through a long series of numerals and initial letters. It paused. Another voice said tensely, *"Tip."* The first voice droned again. The second voice said, *"Tip."* The first voice droned.

Dona looked blank. She turned up another wave-length. A voice barked hysterically. The words ran so swiftly together that they were almost indistinguishable, but certain syllables came out in patterns.

"It's something about commerce," said Kim. "Arranging for some material to be routed on a matter-transmitter."

None of the wavelengths carried music. All carried voices, and all babbled swiftly, without expression, with a nerve-racking haste.

The *Starshine* landed before a gigantic building. An armed guard stood before it at a gateway. Kim trudged across to him. He came back.

"He's stupid," he said shortly. "He knows what to guard, and the name of the plant, and where a workman may go to be received into employment. That's all. We'll try again."

The *Starshine* rose and moved. She was designed for movement in space, with parsecs of distance on every hand. She was unhandy when used as now for an atmosphere-flier. She descended within a factory quadrangle. There was no one about. Literally no one. The dwelling-units were occupied, to be sure, but no one moved anywhere.

When Kim opened the air-lock there was a dull, grumbling rumble in the air. It came from the many-storied building which surrounded this courtyard and stretched away for miles.

KIM and Dona stood blankly in the air-lock door. The air had no odor at all. There was no dust. There was not a single particle of growing stuff anywhere. To people who had lived on Terranova, it was incredible.

Then bells rang. Hundreds and thousands of bells. They rang stridently in all the rooms and corridors of all the dwelling-units which reached away as far as the eye could follow them. It was a ghastly sound, because every bell was in exactly the same tone and made exactly the same tintinabulation.

Then there was a stirring in the houses. Folk moved within them. Figures passed inside the windows. Now and again, briefly, faces peered out. But none lingered to stare at what must have been the unprecedented sight of a space-ship resting in the courtyard.

After a little figures appeared in the doors. Men and women swarmed out and streamed toward openings in the factory building. Their heads turned to gaze at the ship, but they did not even slacken speed in their haste toward the sound of industry.

Kim hailed them. They looked at him blankly and hurried on. He caught hold of a man.

"Where will I find the leader?" he asked sharply. "The boss! The government! The king or whatever you have! Where?"

The man struggled.

"I be late," he protested unhappily. "I work. I be late!"

"Where's the government?" Kim repeated more sharply still. "The king or nobles or whoever makes the laws or whatever the devil—"

"I be late!" panted the man.

He twisted out of Kim's grasp and ran to join the swarming folk now approaching the great building.

They hurried inside. The quadrangle was again empty. Kim scowled. Then other workers came out of the factory and plodded wearily toward the dwelling-units. Kim waylaid a man and shot questions at him. His speech was slurred with fatigue. Dona could not understand him at all. But he gazed at the *Starshine*, and groped heavily for answers to Kim's questions, and at the end trudged exhaustedly into a doorway.

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Kim came into the ship, scowling. He seated himself at the control-board. The ship lifted once more. He headed toward the curve of the plant's bulging form.

"What did you learn, Kim?"

"This is the work continent," said Kim shortly. "The factories and the workmen are here. The owners live in a place of their own. I have to talk to one of the more important merchants. I need information."

Time passed and the ship went on over the rim of the planet. Orbital speed was impossible. The *Starshine* stayed almost within atmosphere and moved eastward at no more than fifteen hundred miles an hour.

"Here it is," said Kim, at last.

The ship settled down once more. There was a thin, hazy overcast here, and clear vision came suddenly as they dropped below it. And the coast and the land before them brought an exclamation from Dona. The shoreline was magnificent, all beautiful bold cliffs with rolling hills behind them. There were mountains on farther yet and splendid vistas everywhere. But more than the land or the natural setting, it was what men had done which caused Dona to exclaim.

The whole terrain was landscaped like a garden. As far as the eye could reach—and the *Starshine* still flew high—every hillside and every plain had been made into artificial but marvelous gardens. There were houses here and there. Some were huge and gracefully spreading, or airily soaring upward, or simple with the simplicity of gems and yet magnificent beyond compare. There was ostentation here, to be sure, but there was surely no tawdriness. There was no city in sight. There was not even a grouping of houses, yet many of the houses were large enough to shelter communities.

"I—see," said Kim. "The workmen live near the factories or in their compounds. The owners have their homes safely away from the ugly part of commerce. They've a small-sized continent of country homes, Dona, and undoubtedly it is very pleasant to live here. Whom shall we deal with?"

DONA shook her head. Kim picked a magnificent residence at random. He slanted the *Starshine* down. Presently it landed lightly upon smooth lawn of incredible perfection, before a home that Dona regarded with shining eyes.

"It's—lovely!" she said breathlessly.

"It is," agreed Kim.

He sat still, looking.

"It even has a feeling all its own," he said. "The palace of a king or a tyrant always has something of arrogance about it. It's designed to impress the onlooker. A pleasure-palace is always tawdry. It's designed to flatter the man who enters it. These houses are solid. They're the homes of men who are thinking of generations to follow them and, meanwhile, only of themselves. I've heard of the merchant princes of Spicus Five, and I'm prejudiced. I don't like those factories with the workmen's homes inside. But—I like this house. Do you want to come with me?"

Dona looked at the house—yearningly. At the view all about, every tree and every stone so placed as to constitute perfection. The effect was not that of a finicky esthetic-ism, but of authentic beauty and dignity. But after a moment Dona shook her head.

"I don't think I'd better," she said slowly. "I'm a woman, and I'd want one like it. I'll stay in the ship and look at the view. You've a communicator?"

Kim nodded. He opened the airlock door and stepped out. He walked toward the great building.

Dona watched his figure grow small in its progress toward the mansion. She watched him approach the ceremonial entrance. She saw a figure in formalized rich clothing appear in that doorway and bow to him. Kim spoke, with gestures. The richly clothed servant bowed for him to go first into the house. Kim entered and the door closed.

Dona looked at her surroundings. Dignity and tranquility and beauty were here. Children growing up in such an environment would be very happy and would feel utterly safe. Wide, smooth, close-cropped lawns, with ancient trees and flowering shrubs stretched away to the horizons. There was the gleam of statuary here and there—rarely. A long way off she could see the glitter of water, and beside it a graceful colonnade, and she knew that it was a pleasure-pool.

Once she saw two boys staring at the space-ship. There was no trace of fear in their manner. But a richly-dressed servant—much more carefully garbed than the boys—led up two of the slim riding-sards of Phanis, and the boys mounted and their steeds started off with that sinuous smooth swiftness which only sards possess in all the first galaxy.

Time passed, and shadows lengthened. Finally Dona realized how many hours had

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elapsed since Kim's departure. She was beginning to grow uneasy when the door opened again and Kim came out followed by four richly clad servants. Those servants carried bundles. Kim's voice came over the communicator.

"Close the inner airlock door, Dona, and don't open it until I say so."

Dona obeyed. She watched uneasily. The four servants placed their parcels inside the airlock at a gesture from Kim. Then there was an instant of odd tension. Dona could not see the servants, but she saw Kim smiling mirthlessly at them. He made no move to enter. He spoke sharply and she heard them file out of the air lock. Dona could see them again.

Kim stepped into the spaceship and closed the door.

"Take her up, Dona—fast!"

The *Starshine* shot upward, with the four servants craning their necks to look at it. It was out of sight of the ground in seconds. It was out of the atmosphere before Kim came into the control-room from the lock.

"Quite a civilization," he said. "You'd have liked that house Dona. There's a staff of several hundred servants, and it is beautiful inside. The man who owns it is also master of one of the bigger industrial plants. He doesn't go to the plant, of course. He has his offices at home, with a corps of secretaries and a television-screen for interviews with his underlings. Quite a chap."

"Were those four men servants?" Dona asked.

"No, they were guards," said Kim drily. "There are no proletarians around that place, and none are permitted. Guards stand watch night and day. I'd told my friend that the *Starshine* was packed with lethal gadgets with which Ades had won at least one war, and he's in the munitions business, so I wasn't going to let his guards get inside. They wanted to, badly, insisting they had to put their parcels in the proper place. He'd have paid them lavishly if they could have captured a ship like the *Starshine*."

He laughed a little.

"I was lucky to pick a munition maker. There aren't many wars in the ordinary course of events, but he turns out weapons for palace guards, mobile fighting-beam projectors, and so on. All the equipment for a planet ruler who wants a fancy army for parades or a force with a punch to fight off any sneak attack via matter-transmitter. That's what your average ruler is afraid of, and what he keeps an army to defend himself against. Of course the disciplinary circuit takes care of his subjects."

CHAPTER VI

Vanished World

AHEAD of them loomed the sun, Spicus, many millions of miles away, while beneath them lay the planet, Spicus Five, a vast hemisphere which was rapidly shrinking into the distance. Kim moved over beside Dona and stared reflectively at the instrument board.

"I got frightened, Kim," the girl said. "You were gone so long."

"I was bargaining," Kim answered. "I told him I came from Ades. I'd a space-ship, so he could believe that. Then I told him what had happened. Selling munitions, he should have known about it beforehand, and I think he did. He doubted that I'd come from Ades as quickly as I said, though, until I recited the names of some of the gracious majesties who are making a grab of planets. Then he was sure. So he wanted to strike a bargain with me for Terranova. He'd supply it with arms, he said, in exchange for a star-cluster of his own in the Second Galaxy. If I'd set up a private matter-transmitter for him. . . ."

Kim laughed without mirth.

"He could colonize a couple of planets himself, and make a syndicate to handle the rest. He saw himself changing his status from that of a merchant princeling to that of a landed proprietor with half a dozen planets as private estates, and probably a crown to wear on week-ends and when he retired from business on Spicus Five. There are precedents, I gather."

"But Kim!" protested Dona. "What did you do?"

"I did one thing that's been needed for a long time," said Kim grimly. "It seems to me that I do everything backwards. I should have attended to the matter of Ades first, but I had a chance and took it. I think I put something in motion that will ultimately smash up the whole cursed system that's made slaves of every human being but those on Ades and Terranova—the disciplinary circuit. Back on Ades we've talked about the

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need to free the people of this galaxy. It's always seemed too big a job. But I think it's started now. It will be a profitable business, and my friend who wanted to bargain for some planets in the Second Galaxy will make a pretty penny of the beginning, and it will carry on of itself."

The planet below and behind was now only a globe. It soon dwindled into a tiny ball. Kim touched Dona on the shoulder.

"I'll take over," he said. "We've got work to do, Dona."

Dona stood up and stamped her foot.

"Kim! You're misunderstanding me on purpose! What about Ades? Did you find out what happened to it?"

Kim began the process of sighting the *Starshine's* nose upon a single, distant, minute speck of light which seemingly could not be told from a million other points of light, all of which were suns.

"I think I found out something," he told her. "I thought a merchant planet would be the place to hear all the gossip of the galaxy. My friend back yonder put his research organization to work finding out what I wanted to know. What they dug up looks plausible. Right now I'm going to get even for it. That's a necessity! After that, we'll see. There were sixteen million people on Ades. We'll try to do something about them. They aren't likely to be all dead—yet."

The sun of Ades swam in emptiness. For uncountable billions of years it had floated serenely with its single planet circling it in the companionability of bodies separated only by millions of miles, when their next nearest neighbors are light-years away. A sun with one planet is a great rarity.

A sun with no satellites—save for giant pulsing Cephids and close-coupled double suns—is almost unknown. But for billions upon billions of years that sun and Ades had kept each other company. Then men had appeared. For a thousand years great space-ships had grimly trundled back and forth to unload their cargoes of criminals upon the chilly small world.

Ades was chosen as a prison planet from the beginning. Later matter-transmitters made the journeys of space-craft useless. For six, seven, eight thousand years there was no traffic but the one-way traffic of its especially contrived transmitter, which would receive criminals from all the galaxy but would return none or any news of them to the worlds outside.

DURING all that time a lonely guard-ship hung drearily about, watching lest someone try to rescue a man doomed to hopeless exile, and return him to happier scenes. And finally the guard-ship had gone away, because the space-ways were no longer used by anybody, and there were no ships in the void save those of the Patrol itself. Accordingly the Patrol was disbanded.

For hundreds of years nothing happened at all. And then Kim Rendell came in the *Starshine,* and shortly thereafter tiny ships began to take off from Ades, and they fought valorously on distant star-systems, and at last a squadron of war-craft came to subjugate Ades for the beastly Empire of Sinab. Finally there was a battle in the bright beams of the lonely sun itself. And after that, for a time, little space-ships swam up from the planet and darted away, and darted back, and darted away, and back.

But never before had there been any such situation as now. The sun, which had kept company with Ades for so long, now shone in lonely splendor, amid emptiness, devoid of its companion. And that emptiness was bewildering to a small ship—sister to the *Starshine*—which flicked suddenly into being nearby.

The ship had come back from a journey among the virgin stars of the Second Galaxy with honorable scars upon its hull and a zestful young crew who wished to boast of their journeying. They had come back to Ades—so they thought—direct, not even stopping at Terranova. And there was no Ades.

The little ship flashed here and there about the bereft sun in bewilderment. It searched desperately for a planet some seven thousand miles in diameter, which had apparently been misplaced. And as it hunted, a second ship whisked into sight from faster-than-light drive. The detectors of the two ships told them of each other's presence, and they met and hung in space together. Then they searched in unison, but in vain. At long last they set out in company for one of the planets of the former Sinabian Empire, on which there must be some news of what had happened to Ades.

On transmitter-drive they inevitably separated and one was much closer to the chosen planet when they came out of stressed space. One drove down into atmosphere while the other was still thousands of miles away.

The leading ship went down at landing-

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speed, toward a city. The other ship watched by electron telescope and prepared to duplicate its course. But the man of the second ship saw—and there could be no doubt about it—that suddenly the landing ship vanished from its place as if it had gone into intergalactic drive in atmosphere. There was a flash of intolerable, unbearable light. And then there was an explosion of such monstrous violence that half of the planet's capital city vanished or was laid in ruins.

The crew of second ship were stunned. But the second ship went slowly and cautiously down into atmosphere, and its communicators picked up voices issuing stern warnings that troops must be welcomed by all citizens, and that absolute obedience must be given to all men wearing the uniform of His Magnificence the Despot of Lith. And then there was babbling confusion and contradictory shoutings, and a hoarse voice ordered all soldiers of His Magnificence to keep a ceaseless watch upon the sky, because a ship had come down from overhead, and when the fighting-beams struck it—to kill its crew—it appeared to have fired some devastating projectile which had destroyed half a great city. All ships seen in the sky were to be shot down instantly. His Magnificence, the Despot of Lith, would avenge the outrage.

The lonely surviving ship went dazedly away from the planet which once had been friendly to the men of Ades. It went back to Ades' sun, and searched despairingly once again, and then fled to the Second Galaxy and Terranova, to tell of what it had seen.

That was an event of some importance. At least all of one planet had been rocked to its core from the detonation of a space-ship which flashed into collision with it at uncountable multiples of the speed of light, and was thereby raised to the temperature of a hot sun's very heart. And besides, there was agitation and suspicion and threats and diplomatic chaos among the planetary governments who had joined to loot the dependencies of Ades, once Ades was eliminated from the scene.

BUT a vastly, an enormously more significant event took place on a planet very far away, at almost the same instant. The planet was Donet Three, the only habitable planet of its system. It was a monstrous, sprawling world, visibly flattened by the speed of its rotation and actually habitable only by the fact that its rotation partly balanced out its high gravity.

The *Starshine* approached over a polar region and descended to touch atmosphere. Then, while Dona looked curiously through the electron-telescope at monstrous ice-mountains below, Kim donned a space-suit, went into the air-lock, and dropped a small object out of the door. He closed the door, returned to the control-room, and took the *Starshine* out to space again.

That was the most significant single action, in view of its ultimate meaning, that had been performed in the First Galaxy in ten thousand years. And yet, in a sense, it was purely a matter of form. It was not necessary for Kim to do it. He had arranged for the same effect to be produced, in time yet to come, upon every one of the three hundred million inhabited planets of the First Galaxy. The thing was automatic; implicit in the very nature of the tyrannical governments sustained by the disciplinary circuit.

Kim had simply dropped a small metal case to the surface of Donet Three. It was very strong—practically unbreakable. It contained an extremely simple electronic circuit. It fell through the frigid air of the flattened pole of Donet Three, and it struck the side of a sloping ice-mountain, and bounced and slid down to a valley and buried itself in snow, and only instants later, the small hole left by its fall was filled in and covered up completely by snow riding on a hundred-mile gale. It was undiscoverable. It was irretrievable. No device of man could detect or recover it. Kim himself could not have told where it fell.

Kim then sighted the *Starshine* on another distant target, and found the planet Arth, and dropped a small metal object into the depths of the humid and festering jungles along its equator. Human beings could live only in the polar regions of Arth. Then he visited a certain planet in the solar system of Tabor and a small metal case went twisting through deep water down to the seabed of its greatest ocean.

He dropped another on the shifting desert sands which cover one-third of Sind where an Emperor and Council rule in the name of a non-existent republic, and yet another on a planet of Megar, where an otherwise unidentified Queen Amritha held imperial power, and others. . . .

He dropped one small metal case, secured

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from a merchant-prince on Spicus Five, on each of the planets whose troops had moved into the planets left defenseless by the vanishment of Ades.

"I wanted to do that myself, because what we've got to do next is dangerous and we may get killed," he told Dona drily. "But now we're sure that men won't stay slaves forever and now we can try to do something about Ades. I'm afraid our chances are pretty slim."

CHAPTER VII

One Chance in a Million

IN SPITE of his pessimism, Kim settled down to the fine calculations required for a voyage to a blue-white dwarf star not readily distinguished from others. Most inhabited planets, of course, circled sol-type suns. Light much different from that in which the race had developed was apt to have produced vegetation inimical to humanity, and useful vegetation did not thrive. And of course sol-type stars are most readily spotted by space navigators. As he checked his course with star-charts, Dona spoke softly.

"Thanks, Kim."

"For what?"

"For not wanting to put me in safety when you're going to do something dangerous. I wouldn't let you, but thanks for not trying."

"*Mmmmh!*" said Kim. "You're too useful."

He lined up his course and pressed the transmitter-drive stud on the control-panel. Space danced a momentary saraband,—and there was a blue-white dwarf two hundred million miles away, showing barely a planet-sized disk, but pouring out a pitiless white glare that hurt the eyes.

"That's it," said Kim. "That's the sun Alis. There should be four planets, but we're looking for Number One. It goes out beyond Two at aphelion, so we have to check the orbit—if we can find it—before we can be sure. No—we should be able to tell by the rotation. Very slow."

"And what are you going to do with it?" demanded Dona.

There were bright spots in emptiness which the electron telescope instantly declared to be planets. Kim set up cameras for pictures.

"Alis One is the only really uninhabitable planet in the galaxy that's inhabited," he observed painstakingly. "It belongs to Pharos Three. I understand it's the personal property of the king. It has no atmosphere in spite of an extremely high specific gravity and a reasonable mass. But the plutonium mines have been worked for five thousand years."

"Plutonium mines with that half-life?" Dona said skeptically. "You must be joking!"

"No," said Kim. "It's a very heavy planet, loaded with uranium and stuff from bismuth on out. It has an extremely eccentric orbit. As I told you, at aphelion it's beyond the orbit of Pharos Two. At perihelion, when it's nearest to its sun, it just barely misses Roche's Limit—the limit of nearness a satellite can come to its primary without being torn apart by tidal strains. And at its nearest to its sun, it's bombarded with everything a sun can fling out into space from its millions of tons of disintegrating atoms. Alpha rays, beta rays, gamma particles, neutrons, and everything else pour onto its surface as if it were being bombarded by a cyclotron with a beam the size of a planet's surface. You see what happens?"

Dona looked startled.

"But Kim, every particle of the whole surface would become terrifically radioactive. It would kill a man to land on it!"

"According to my merchant-prince friend on Spicus Five, it did kill the first men to set foot on it. But the point is that its heavy elements have been bombarded, and most of its uranium has gone on over to plutonium and americium and curium. In ancient days, when it went out on the long sweep away from its sun, it cooled off enough for men to land on it at its farthest-out point. With shielded space-suits they were able to mine its substance for four to five months before heat and rising induced radio-activity drove them off again. Then they'd wait for it to cool off once more on its next trip around.

"They went to it with space-ships, and the last space-line in the First Galaxy ran plutonium and americium and the other radio-actives to a matter-transmitter from which they could be distributed all over the galaxy. But it wasn't very efficient. They could only mine for four or five months every four years. All their equipment was melted and ruined when they were able to land again. A few hundred years ago, however, they solved the problem."

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DONA stared out the vision-ports. There were two planets which might be the one in question. But there were only three in sight.

"How did they solve it?" Dona asked.

"Somebody invented a shield," said Kim, as drily as before. "It was a force-field. It has the property of a magnetic field on a conductor with a current in it, except that it acts on mass as such. A current-carrying conductor in a magnetic field tends to move at right angles both to the current and the field. This force-field acts as if mass were an electric charge.

"Anything having mass, entering the field, tries to move sidewise. The faster it moves, the stronger the sidewise impulse. Neutrons, gamma particles, met rays and even electrons have mass. So has light. Everything moving that hits the shielding field moves sidewise to its original course. Radiation from the sun isn't reflected. It's deflected, at right angles.

"So, with the shield up men can stay on the planet when it is less than three diameters from its sun. No heat reaches it. No neutrons. No radiations at all. It doesn't heat up. And that's the answer. For three months in every four-year revolution, they have to keep the shield up all the time. For three months more they keep it up intermittently, flashing it on for fractions of a second at a time, just enough to temper the amount of heat they get.

"They live on great platforms of uranium glass, domed in. When they go out mining they wear shielded space-suits and work in shielded machines. The whole trick was worked out about five hundred years ago, they say, and the last space-line went out of existence, because they could use a matter-transmitter for all but six of our months of that planet's year."

"And did you find out how it's done?" asked Dona.

"Hardly," said Kim. "The planet belongs to the king of Pharos Three. Even five hundred years ago the governments of all the planets were quite tight corporations. Naturally Pharos wouldn't let the secret get out. There are other planets so close to their primaries that they're radioactive. If the secret were to be disclosed there'd be competition. There'd be other plutonium mines in operation. So he's managed to keep it to himself. But we've got to find out the trick."

There was silence. Kim began to check over the pictures the cameras had taken and developed. He shook his head. Then he stared at a photograph which showed the blue-white dwarf itself. His face looked suddenly very drawn and tired.

"Kim," said Dona presently. "It's stupid of me, but I don't see how you're going to learn the secret."

Kim put the picture on the enlarger, for examination in a greater size.

"They made the shield to keep things out," he said wearily. "Radiation, charged particles, neutrons—everything. The planet simply can't be reached, not even by matter-transmitters, when the shield is up. But by the same token nothing can leave the planet either. It can't even be spotted from space, because the light of the sun isn't reflected. It's deflected to a right-angled course. You might pick it up if it formed a right-angled triangle with you and the sun, or you might spot it in transit across the sun's disk. But that's all."

"Yes."

[*Turn page*]

Tired Kidneys Often Bring Sleepless Nights

Doctors say your kidneys contain 15 miles of tiny tubes or filters which help to purify the blood and keep you healthy. When they get tired and don't work right in the daytime, many people have to get up nights. Frequent or scanty passages with smarting and burning sometimes shows there is something wrong with your kidneys or bladder. Don't neglect this condition and lose valuable, restful sleep.

When disorder of kidney function permits poisonous matter to remain in your blood, it may also cause nagging backache, rheumatic pains, leg pains, loss of pep and energy, swelling, puffiness under the eyes, headaches and dizziness.

Don't wait! Ask your druggist for Doan's Pills, a stimulant diuretic, used successfully by millions for over 50 years. Doan's give happy relief and will help the 15 miles of kidney tubes flush out poisonous waste from your blood. Get Doan's Pills. *(Adv.)*

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"The shield was a special job," said Kim. "For a special purpose. It was not a weapon. But there were all those planets that could be grabbed if only Ades were knocked out. So why shouldn't King Pharos sneak a force-field generator on to Ades? When the field went on, Ades would be invisible and unreachable from outside. And the outside would be unreachable from it. Space-ships couldn't get through the field. Matter-transmitters couldn't operate through it. If a few technicians were sneaked to Ades as supposed exiles and promised adequate reward, don't you think they'd hide out somewhere and turn on that field, and leave it on until the folk on Ades had starved or gone mad?"

HORRIFIED, Dona stared at him. She went pale.

"Oh—horrible! The sky would be black—always! Never a glimmer of light. No stars. No moons. No sun. The plants would die and rot, and the people would grow bleached and pale, and finally they'd starve."

"All but the little gang hidden away in a well-provisioned hideout," said Kim grimly. "I think that's what's happened to Ades, or is happening. And this is the solar system where the little trick was worked out. I'd hoped simply to raid the generator and find out how it worked, which would be dangerous enough. Look!"

He pointed to the projected image of the sun. There was a tiny dot against its surface. It was almost, it seemed, bathed in the tentacular arms of flaming gases flung up from the sun's surface.

"There's the planet," said Kim. "At its closest to the sun! With the shield up, so that nothing can reach its surface. Nothing! And that includes space-ships such as this. And at that distance, Dona, the hard radiation from the sun would go right through the *Starshine* and kill us in seconds before we could get within millions of miles of the planet. If there's any place in the universe that's unapproachable, there it is. It may be anything up to three months before the shield goes down even for fractions of a second at a time. And my guess is that the people on Ades won't last that long. They've had days in which to grow hopeless already. Want to gamble?"

Dona looked at him. He regarded her steadily.

"Whatever you say, Kim."

"Sixteen million lives on Ades, besides other aspects of the situation," said Kim. "The odds against us are probably about the same, sixteen million to one. That makes it a fair bet. We'll try."

He got up and began to tinker with the radiation-operated relay which turned off the transmitter-drive. Presently he looked up.

"I'm glad I married you, Dona," he said gruffly.

As the *Starshine* moved closer in, the feeling in the control-room grew tense. The little ship had advanced to within twenty millions of miles of the blue-white sun, and even at that distance there was a detectable X-ray intensity.

Kim had turned on a Geiger counter, and it was silent simply because there was no measurable interval between its discharges. A neutron detector showed an indication very close to the danger mark. But Kim had the *Starshine's* nose pointed to the intolerably glaring sun.

The electron telescope showed the sun's surface filling all its field, and because the illumination had been turned so low, raging sun-storms could be seen on the star's disk. Against it, the black silhouette of the planet was clear. It was small. Kim estimated its diameter at no more than six thousand miles. The *Starshine's* gyros hummed softly and the field of the telescope swayed until the planet was centered exactly.

There was a little sweat on Kim's forehead.

"I—don't mind taking the chance myself, Dona," he said, dry-throated. "But I hate to think of you. . . If we miss, we'll flash into the sun."

"And never know it," said Dona, smiling. "It'll be all over in the skillionth of a second—if we miss. But we won't."

"We're aiming for the disk of the planet," he reminded her. "We have to go in on transmitter-speed to cut the time of our exposure to hard radiation. That speed will make the time of exposure effectively zero. But we have to move at a huge multiple of the speed of light, and we have to stop short of that planet. It may not be possible!"

"Do you want me to press the button, Kim?" Dona said softly.

He took a deep breath.

"I'll do it. Thanks, Dona."

He put his finger on the stud that would throw the ship into transmitter-drive, aimed straight at the disk of planet against the in-

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ferno of sun beyond. There was nothing more certain than that to miss the planet would fling them instantly into the sun. And there was nothing more absurd than to expect to come out of transmitter-drive within any given number of millions of miles, much less within a few thousands. But—

Kim pressed the stud.

Instantly there was blackness before them. A monstrous, absolute blackness filled half the firmament. It was the force-field-shielded planet, blotting out its sun and half the stars of the galaxy. Kim had made a bull's-eye on a target relatively the size of a dinnerplate at eleven hundred yards. More than that, he had stopped short of his target, equivalent to stopping a bullet three inches short of that plate.

He said in a queer voice:

"The—relay worked—even backward, Dona."

CHAPTER VIII

Dark Barrier

FOR a time Kim sat still and sweat poured out on his skin. Because their chances had seemed slight indeed. To stop a spaceship at transmitter-speed was impossible with manual means, anyhow. It could cross a galaxy in the tenth of a millisecond. So Kim had devised a radiation-operated relay which threw off the drive when the total radiation reaching a sensitive plate in the bow had reached an adjustable total.

If in an ordinary flight the *Starshine* headed into a sun—unlikely as such an occurrence was—the increased light striking the relay-plate would throw off the drive before harm came. But this time they had needed to approach fatally close to a star. So Kim had reversed the operation of the relay. It would throw off the drive when the amount of light reaching it dropped below a certain minimum. That could happen only if the ship came up behind the planet, so the sun was blacked out by the world's shadowed night-side.

It had happened. The glare was cut off. The transmitter-drive followed. The *Starshine* floated within a bare few million miles—perhaps less than one million—of a blue-white dwarf star, and the two humans in the ship were alive because they had between them and the sun's atomic furnaces, a planet some six thousand miles in diameter.

"We don't know how our velocity matches this thing," said Kim after an instant. "We could be drifting toward the edge of the shadow. You watch the stars all around. Make sure I head directly for that blackness. When we touch, I'll see what I can find out."

He reversed the ship's direction. He let the *Starshine* float down backward. The mass of unsubstantial darkness seemed to swell. It engulfed more and more of the cosmos. . . .

A long, long time later, there was a strange sensation in the feel of things. Dona gave a little cry.

"Kim! I feel queer! So queer!"

Kim moved heavily. His body resisted any attempt at motion, and yet he felt a horrible tension within him, as if every molecule were attempting to fly apart from every other molecule. The controls of the ship moved sluggishly. Each part of each device seemed to have a vast inertia. But the controls did yield. The drive did come on. A little later the sensation ended. But both Kim and Dona felt utterly exhausted.

"It—was getting dark, too," said Dona. She trembled.

"When we tried to move," said Kim, "our arms had a tendency to move at right angles to the way we wanted them to, at all the possible right angles at once. That was the edge of the shield, Dona. Now we'll see what we've got."

He uncovered the recording cabinet. There had been no need to set up instruments especially for the analysis of the field. They had been a part of the *Starshine's* original design for exploration. Now Kim read the records.

"Cosmic-ray intensity went down," he reported, studying the tapes. "The dielectric constant of space changed. It just soared up. The relationship of mass to inertia. That particular gadget never recorded anything significant before, Dona. In theory it should have detected space-warps. Actually, it never amounted to anything but a quantitative measure of gravitation on a planet one landed on. But it went wild in that field! And here! Look!"

He exultantly held out a paper recording.

"Glance at that, Dona! See? A magnetometer to record the strength of the magnetic field on a new planet. It recorded the ship's own field in the absence of any other. And the ship's field dropped to zero! Do you see? Do you?"

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"I'm afraid not," admitted Dona. But she smiled at the expression on Kim's face.

"It's the answer!" said Kim zestfully. "Still I don't know how that blasted field is made, but I know now how it works. Neutrons have no magnetic field, but this thing turns them aside. Alpha and beta and gamma radiation do have magnetic fields, but this thing turns them aside, too. And the point is that it neutralizes their magnetic fields, because otherwise it couldn't start to turn them aside. So if we make a magnetic field too strong for the field to counter, it won't be able to turn aside anything in that magnetic area. The maximum force-field strength needed for the planet is simply equal to the top magnetic field the sun may project so far. If we can bury the *Starshine* in magnetic flux that the force-field can't handle—"

HE GRINNED. He hugged her.

"And there's a loop around the *Starshine's* hull for space-radio use," he cried. "I'll run a really big current through that loop and we'll try again. We should be able to put quite a lot of juice through a six-turn loop and get a flux-density that will curl your hair!"

He set to work, beaming. It took him less than half an hour to set up a series-wound generator in the airlock, couple in a thermocell to the loop, so it would cool the generator as the current flowed and thereby reduce its internal resistance.

"Now!" he said. "We'll try once more. The more juice that goes through the outfit, the colder the generator will get and the less its resistance will be, and the more current it will make and the stronger the magnetic field will be."

He flipped a switch. There was a tiny humming noise. A meter-needle swayed over, and stayed.

The *Starshine* ventured into the black globe below.

Nothing happened. Nothing happened at all.

"The stars are blotted out, Kim," Dona at last said uneasily.

"But you feel all right, don't you?" He grinned like an ape in his delight.

"Why, yes."

"I feel unusually good," said Kim happily.

The vision-screens were utterly blank. The ports opened upon absolute blackness—blackness so dead and absorbent that it seemed more than merely lack of light. It seemed like something horrible pressing against the ports and trying to thrust itself in.

And, suddenly, a screen glowed faintly, and then another. . . .

Then there was a greenish glow in the ports, and Dona looked out and down.

Above was that blackness, complete and absolute. But below, seen with utter clarity, because of the absence of atmosphere, lay a world. Nothing grew upon it. Nothing moved. It was raw, naked rock with an unholy luminescence. Here and there the glow was brighter where mineral deposits contained more highly active material. The surface was tortured and twisted, in swirled strained writhings of formerly melted rock.

They looked. They saw no sign of human life nor any sign that humans had ever been there. But after all, even five thousand years of mining on a globe six thousand miles through would not involve the disturbance of more than a fraction of its surface.

"We did it," said Kim. "The shield can be broken through by anything with a strong enough magnetic field. We won't disturb the local inhabitants. They undoubtedly have orders to kill anybody who incredibly manages to intrude. We can't afford to take a chance. We've got to get back to Ades!"

He pointed the *Starshine* straight up. He drove her, slowly, at the ceiling of impenetrable black. He worked upon the transmitter-drive relay. He adjusted it to throw the *Starshine* into transmitter-speed the instant normal starlight appeared ahead.

The ship swam slowly upward. Suddenly there was a momentary impression of reeling, dancing stars. Kim swung the bow about.

"Now for Ades!" he said gleefully. "Did you know, Dona, that once upon a time the word Ades meant hell?"

The stars reeled again. . . .

They found Ades. Knowing how, now, it was not too difficult. There were two positions from which it could be detected. One was a position in which it was on a line between the *Starshine* and the sun. The other was a position in which the invisible planet, the space-ship, and the sun formed the three points of a right-angled triangle with Ades in the ninety-degree corner.

Kim sent the little ship in a great circle beyond the planet's normal orbit, watching for it to appear where such an imaginary triangle would be formed. The deflected light of the sun would spread out in a circular

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flat thin plane, and somewhere about the circuit the *Starshine* had to run through it. It would be a momentary sight only, and it would not be bright; it would be utterly unlike the steady radiance of a normal planet. Such flashes, if seen before, would have been dismissed as illusions or as reflections from within the ship. Even so, it was a long, long time before Dona called out quickly.

"There!" she said, and pointed.

KIM swung the *Starshine* back. He saw the dim, diffused spectre of sun's reflection. They drove for it, and presently a minute dark space appeared. It grew against the background of a radiant galaxy, and presently was a huge blackness, and the *Starshine's* space-radio loop was once more filled with a highly improbable electrical amperage by the supercooled generator in the airlock.

The ship ventured cautiously into the black.

And later there were lonely, unspeakably desolate little lights of the lost world down below.

Kim drove for them with a reckless exultation. He landed in the very center of a despairing small settlement which had believed itself dead and damned—or at any rate doomed. He shouted out his coming, and Dona cried out the news that the end of darkness was near, and men came surging toward her to listen. But it was Dona who explained, her eyes shining in the light of the torches men held up toward her.

Kim had gone back into the ship and was using the communicators to rouse out the mayors of every municipality, and to say he had just reached the planet from Terranova—there was no time to tell of adventures in between—and he needed atmosphere fliers to gather around him at once, with armed men in them, for urgent business connected with the restoration of a normal state of affairs.

They came swiftly, flittering down out of the blackness overhead, to land in the lights of huge bonfires built by Kim's orders. And Kim, on the communicators, asked for other bonfires everywhere, to help in navigation, and then he went out to be greeted by the bellowing Mayor of Steadheim.

"What's this?" he roared. "No sunlight! No stars! No matter-transmitter! No ships! Our ships took off and never came back! What the devil happened to the universe?"

Kim grinned at him.

"The universe is all right. It's Ades. Somewhere on the planet there's a generator throwing out a force-field. It will have plenty of power, that generator. Maybe I can pick it up with the instruments of the *Starshine*. But we'll be sure to find it with magnetic compasses. What we want is for everyone to flick their compasses and note the time of swing. We want to find the place where the swings get slower and slower. When we find a place where the compasses point steadily, without a flicker—not even up and down—we'll be at the generator. And everybody put on navigation-lights or there'll be crashes!"

He lifted the *Starshine* and by communicator kept track of the search. Toward the polar regions was the logical hiding-place for the generator, because there the chilly climate of Ades became frigid and there were no inhabitants. But it was a long search. Hours went by before a signal came from a quarter-way around the globe.

Then the *Starshine* drove through darkness—but cautiously—with atmosphere-fliers all about. And there was an area where the planet's magnetic field grew weaker and weaker, and then a space in which there was no magnetic field. But in the darkness they could find no sign of a depot!

CHAPTER IX

Gadget of Hope

GRIMLY Kim set the *Starshine* on the ground, in the very center of the dark area, and started the generator in the airlock. When it worked at its utmost, and nothing happened, Kim threw in the leads of the ship's full engine-power. There was a surging of all the terrific energy the ship's engines could give. Then the radio-loop went white-hot and melted, with a sputtering arc as the circuit broke.

Abruptly the stars appeared overhead, and simultaneously came the leaping flame of a rumbling explosion. Then followed the flare of fuel burning savagely in the night. The *Starshine's* full power had burned out the force-field generator, an instant before the loop melted to uselessness.

Kim was with the men who ran toward the scene of the explosion, and he would have

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tried to stop the killing of the other men who ran out of underground burrows, but the victims would not have it. They expected to be killed, and they fought wildly. All died.

Later Kim inspected the shattered apparatus which now lay in pieces, but he thought it could be reconstructed and perhaps in time understood.

"Night's nearly over," he announced to those who prowled through the wreckage. "It shouldn't be much more than an hour until dawn. If I hadn't seen sunlight for a week or more, I think, I'd go for a look at the sunrise."

In seconds the first atmosphere-flier took off. In minutes the last of them were gone. They flew like great black birds beneath the starlight, headed for the east to greet a sun they had not expected to see again.

But the Mayor of Steadheim stayed behind.

"Hah!" he said, growling. "It's over my head. I don't know what happened and I never expect to understand. How are my sons in the new galaxy?"

"Fine when last we heard," said Dona, smiling. "Come into the ship."

He tramped into the living space of the *Starshine*. He eased himself into a seat.

"Now tell me what's gone on, and what's happened, and why!" he commanded dictatorially.

Kim told him, as well as he could. The Mayor of Steadheim fumed.

"Took over the twenty-one planets, eh?" he sputtered. "We'll attend to that. We'll take a few ships, go over there, and punish 'em."

"I suspect they've pulled out," said Kim. "If they haven't, they will. And soon! The Gracious Majesties and Magnificents, and the other planetary rulers who essayed some easy conquests, have other need for their soldiers now. Plenty of need!"

"Eh, what?" cried the mayor. "What's the matter? Those rulers have got to have a lesson! We didn't try to free the whole galaxy because it was too big a job. But it looks like we'll have to try!"

"I doubt the need," said Kim, amused. "After all, it's the disciplinary circuit which has enslaved the human race. When the psychogram of every citizen is on file, and a disciplinarian has only to put his card in the machinery and press a button to have that man searched out by disciplinary-circuit waves and tortured, wherever he may be—when that's possible—any government is absolute. Men can't revolt when the whole population or any part of it can be tortured at the ruler's whim."

Dona's expression changed.

"Kim!" she said accusingly. "Those things you got on Spicus Five and dropped on the planets the soldiers came from—what were they?"

"I'll tell you," said Kim. "The disciplinary circuit is all right to keep criminals in hand—not rebels like us, but thieves and such—and it does keep down the number of officials who have to be supported by the state. Police and guards aren't really needed on a free planet with the disciplinary circuit in action. It's a useful machine for the protection of law and order. The trouble is that, like all machines, it's use has been abused. Now it serves tyranny. So I made a device to defend freedom."

THE Mayor of Steadheim cocked a suspicious eye upon him.

"I procured a little gadget," said Kim. "I dropped the gadget in various places where it wasn't likely to be found. If one man is under disciplinary circuit punishment, or two or three or four—that's not unreasonable on a great planet—nothing happens. But if twenty-five or fifty or a hundred are punished at once, the disciplinary-circuit is blown out as I just blew out that force-field generator."

The Mayor of Steadheim considered this information.

"*Ha-hmmm!*" he said profoundly.

"Criminals can be kept down, but a revolt can't be suppressed," Kim went on. "The soldiers who are occupying the twenty-one planets will be called back to put down revolts, as soon as the people discover the disciplinary circuits on their planets are blowing out, and that they blow out again as fast as they're re-made and used."

"*Hm!*" said the Mayor of Steadheim. "Not bad! And the rebels will have some very tasty ideas of what to do to the folk who've tyrannized over them. No troops can stop a revolt nowadays. Not for long!"

"No, not for long," said Kim. "No government will be able to rule with a dissatisfied population. Not if it has a little gadget hidden somewhere that will blow out the disciplinary circuit, if it's used to excess."

"Good enough, good enough," grumbled the mayor. "When rulers are kept busy satisfying their people, they won't have time to

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bother political offenders like us on Ades, or start wars." He looked up. "Space!" he groaned. "Three hundred million planets! How long before we can have them all fitted out for freedom?"

Kim chuckled.

"I explained the principle of the gadget to a munitions-manufacturer on Spicus Five," he said drily. "I offered it to him in exchange for a dozen samples made up to my order. Does it occur to you that every tyrant and every despot and every king in the Galaxy will be very, very happy to buy those little gadgets at a fine fat price, to sow in the dominions of his neighbors? Then he needn't fear them! Don't you see? And my munitions-maker friend will be impartially ready to sell them to his neighbors. They'll actually increase the market for military goods for palace guards and the like."

The Mayor of Steadheim puffed in his breath until it looked as if he would explode. Then he bellowed with laughter.

"Make the tyrants dethrone each other," he roared delightedly. "They'll weaken each other until they find they've their own people to deal with. There'll be a fine scramble! I give it five years, no more, before there's not a king in the galaxy who dares order an execution without a jury-trial first!"

"A consummation devoutly to be wished," said Kim, smiling. "I rather like the idea myself."

The mayor heaved himself up.

"Hah!" he said, still chuckling. "I'll go back to my wife and tell her to come outdoors and look at the stars. What will you two do next?"

"Sleep, I suspect," said Kim. It was all over. The realization made him aware of how tired he was. "We'll probably put in twenty-four hours of just plain slumber. Then we'll see if anything more needs to be done, and then I guess Dona and I will head back to Terranova. The Organizer there is worried about a shortage of textiles."

"To the devil with him," grunted the Mayor of Steadheim. "We've had a shortage of sunlight! You're a good man, Kim Rendell. I'll tell my grandchildren about you, when I have them."

He waved grandly and went out. A little later his flier took off, occulting stars as it rose.

Kim closed the airlock door. He yawned again.

"Kim," said Dona. "We had to break that shield, but it was dangerous."

"Yes," said Kim. He yawned again. "So it was. I'll be glad to get back to our house on Terranova."

"So will I," said Dona. Her face had become determined. "We shouldn't even think of leaving it again, Kim! We should—anchor ourselves to it, so nobody would think of asking us to leave."

"A good idea," said Kim. "If it could be done."

Dona looked critically at her fingers, but she flushed suddenly.

"It could," she said softly. "The best way would be—children."

"We're All Doomed to a Horrible Death If We Don't Act — Now!"

DR. MURFREE was alarmed. His test showed that the whole country was getting more radioactive. The normal count was up ten times! Somebody had to get busy at the problem. It was up to him to find Bud Gregory—and get to work.

"I'm the only person Bud will co-operate with," Murfree told his wife when she objected strenuously to his going out in quest of the hillbilly genius. "I've got to find him—or the radiation will increase and the world will be filled with freaks, mutations, monsters. After that—more radiation—and we'll all be doomed to a horrible death!"

How Bud Gregory and Dr. Murfree handle this menace is described in THE DEADLY DUST, by William Fitzgerald, next issue's featured novelet. It's the third in the Bud Gregory series and it eclipses the two previous stories by far! Look forward to a splendid reading treat!

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THE BIG NIGHT

By HUDSON HASTINGS

When the outmoded space-ship "La Cucaracha" battles against the inroads of space transmission, Logger Hilton must choose between a bright future or a daring venture for a lost cause!

CHAPTER I

Last of the Hyper Ships

SHE CAME lumbering up out of the ecliptic plane of the planets like a wallowing space-beast, her jet tubes scarred and stained, a molten streak across her middle where Venus's turgid atmosphere had scarred her, and every ancient spot-weld in her fat body threatened to rip apart the moment she hit stress again.

The skipper was drunk in his cabin, his maudlin voice echoing through the compartments as he bewailed the unsympathetic harshness of the Interplanetary Trade Commission.

There was a mongrel crew from a dozen worlds, half of them shanghaied. Logger Hilton, the mate, was trying to make sense out of the tattered charts, and *La Cucaracha*, her engines quaking at the suicidal thought, was plunging ahead through space into the Big Night.

In the control room a signal light flared. Hilton grabbed a mike.

"Repair crew!' he yelled. "Get out on the skin and check jet A-six. Move!"

He turned back to his charts, chewing his lip and glancing at the pilot, a tiny, inhuman

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A Novelet of the Spaceways

As the cabin door burst open, Hilton sent the squealing Cassplan sprawling to the deck with a jolting blow

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Selenite, with his arachnoid multiple limbs and fragile-seeming body. Ts'ss—that was his name, or approximated it—was wearing the awkward audio-converter mask that could make his sub-sonic voice audible to human ears, but, unlike Hilton, he wasn't wearing space-armor. No Lunarian ever needed protection against deep space. In their million years on the Moon, they had got used to airlessness. Nor did the ship's atmosphere bother Ts'ss. He simply didn't trouble to breathe it.

"Blast you, take it easy!" Hilton said. "Want to tear off our hide?"

Through the mask the Selenite's faceted eyes glittered at the mate.

"No, sir. I'm going as slowly as I can on jet fuel. As soon as I know the warp formulae, things'll ease up a bit."

"Ride it! Ride it—without jets!"

"We need the acceleration to switch over to warp, sir."

"Never mind," Hilton said. "I've got it now. Somebody must have been breeding fruit-flies all over these charts. Here's the dope." He dictated a few equations that Ts'ss' photographic memory assimilated at once.

A distant howling came from far off.

"That's the skipper, I suppose," Hilton said. "I'll be back in a minute. Get into hyper as soon as you can, or we're apt to fold up like an accordion."

"Yes, sir. Ah—Mr. Hilton?".

"Well?"

"You might look at the fire extinguisher in the Cap'n's room."

"What for?" Hilton asked.

Several of the Selenite's multiple limbs pantomimed the action of drinking. Hilton grimaced, rose, and fought the acceleration down the companionway. He shot a glance at the visio-screens and saw they were past Jupiter already, which was a relief. Going through the giant planet's gravity-pull wouldn't have helped *La Cucaracha's* aching bones. But they were safely past now. Safely! He grinned wryly as he opened the captain's door and went in.

CAPTAIN Sam Danvers was standing on his bunk, making a speech to an imaginary Interplanetary Trade Commission. He was a big man, or rather he had been once, but now the flesh had shrunk and he was beginning to stoop a little. The skin of his wrinkled face was nearly black with space-tan. A stubble of gray hair stood up angrily.

Somehow, though, he looked like Logger Hilton. Both were deep-space men. Hilton was thirty years younger, but he, too, had the same dark tan and the same look in his blue eyes. There's an old saying that when you go out into the Big Night, beyond Pluto's orbit, that enormous emptiness gets into you and looks out through your eyes. Hilton had that. So did Captain Danvers.

Otherwise—Hilton was huge and heavy where Danvers was a little frail now, and the mate's broad chest bulged his white tunic. He hadn't had time yet to change from dress uniform, though he knew that even this cellulose fabric couldn't take the dirt of a space-run without showing it. Not on *La Cucaracha,* anyway.

But this would be his last trip on the old tub.

Captain Danvers interrupted his speech to ask Hilton what the devil he wanted. The mate saluted.

'Routine inspection, sir," he observed, and took down a fire extinguisher from the wall. Danvers sprang from the bunk, but Hilton moved too fast. Before the captain reached him, Hilton had emptied the tank down the nearest disposal vent.

"Old juice," he explained. "I'll refill her."

"Listen, Mr. Hilton," Danvers said, swaying slightly and stabbing a long forefinger at the mate's nose. "If you think I had whisky in there, you're crazy."

"Sure," Hilton said. "I'm crazy as a loon, skipper. How about some caffeine?"

Danvers weaved to the disposal port and peered down it vaguely.

"Caffeine. Huh? Look, if you haven't got sense enough to take *La Cucaracha* into hyper, you ought to resign."

"Sure, sure. But in hyper it won't take long to get to Fria. You'll have to handle the agent there."

"Christie? I—I guess so." Danvers sank down on the bunk and held his head. "I guess I just got mad, Logger. ITC—what do they know about it? Why, we opened that trading post on Sirius Thirty."

"Look, skipper, when you came aboard you were so high you forgot to tell me about it," Hilton said. "You just said we'd changed our course and to head for Fria. How come?"

"Interplanetary Trade Commission," Danvers growled. "They had their crew checking over *La Cucaracha.*"

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"I know. Routine inspection."

"Well, those fat slobs have the brass-bound nerve to tell me my ship's unsafe! That the gravity-drag from Sirius is too strong—and that we couldn't go to Sirius Thirty!"

"Could be they're right," Hilton said thoughtfully. "We had trouble landing on Venus."

"She's old." Danvers voice was defensive. "But what of it? I've taken *La Cucaracha* around Betelgeuse and plenty closer to Sirius than Sirius Thirty. The old lady's got what it takes. They built atomic engines in those days."

"They're not building them now," Hilton said, and the skipper turned purple.

"Transmission of matter!" he snarled. "What kind of a crazy set-up is that? You get in a little machine on Earth, pull a switch, and there you are on Venus or Bar Canopus or—or Purgatory, if you like! I shipped on a hyper-ship when I was thirteen, Logger. I grew up on hyper-ships. They're solid. They're dependable. They'll take you where you want to go. Hang it, it isn't safe to space-travel without an atmosphere around you, even if it's only in a suit."

"That reminds me," Hilton said. "Where's yours?"

"Ah, I was too hot. The refrigerating unit's haywire."

The mate found the lightweight armor in a closet and deftly began to repair the broken switch.

"You don't need to keep the helmet closed, but you'd better wear the suit," he said absently. "I've issued orders to the crew. All but Ts'ss, and he doesn't need any protection."

Danvers looked up. "How's she running?" he asked quickly.

"Well, she could use an overhaul," Hilton said. "I want to get into hyper-space fast. This straight running is a strain. I'm afraid of landing, too."

"Uh. Okay, there'll be an overhaul when we get back—*if* we make a profit. You know how much we made this last trip. Tell you what—you supervise the job and take a bigger cut for it."

HILTON'S fingers slowed on the switch. He didn't look around.

"I'll be looking for a new berth," he said. "Sorry, skipper. But I won't be aboard after this voyage."

There was silence behind him. Hilton grimaced and began to work again on the spacesuit. He heard Danvers say:

"You won't find many hyper-ships needing mates these days."

"I know. But I've got engineering training. Maybe they would use me on the matter-transmitters. Or as an outposter—a trader."

"Oh, for the love of Pete! Logger, what are you talking about? A—*trader*? A filthy outposter? You're a hyper-ship man!"

"In twenty years there won't be a hyper-ship running," Hilton said.

"You're a liar. There'll be one."

"She'll fall apart in a coupla of months!" Hilton said angrily. "I'm not going to argue. What are we after on Fria, the fungus?"

After a pause Danvers answered.

"What else is there on Fria? Sure, the fungus. It's pushing the season a little. We're not due there for three weeks Earth-time, but Christie always keeps a supply on hand. And that big hotel chain will pay us the regular cut. Blamed if I know why people eat that garbage, but they pay twenty bucks a plate for it."

"It could mean a profit, then," Hilton said. "Provided we land on Fria without falling apart." He tossed the repaired suit on the bunk beside Danvers. "There you are, skipper. I'd better get back to controls. We'll be hitting hyper pretty soon."

Danvers leaned over and touched a button that opened the deadlight. He stared at the star-screen.

"You won't get this on a matter-transmitter," he said slowly. "Look at it, Logger."

Hilton leaned forward and looked across the Captain's shoulder. The void blazed. To one side a great arc of Jupiter's titan bulk glared coldly bright. Several of the moons were riding in the screen's field, and an asteroid or two caught Jupiter's light in their tenuous atmospheres and hung like shining veiled miniature worlds against that blazing backdrop. And through and beyond the shining stars and moons and planets showed the Big Night, the black emptiness that beats like an ocean on the rim of the Solar System.

"So it's pretty," Hilton said. "But it's cold, too."

"Maybe. Maybe it is. But I like it. Well, get a job as a trader, you jackass. I'll stick to *La Cucaracha*. I know I can trust the old lady."

For answer the old lady jumped violently and gave a wallowing lurch.

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CHAPTER II

Bad News

HILTON instantly exploded out of the cabin. The ship was bucking hard. Behind him the mate heard Danvers shouting something about incompetent pilots, but he knew it probably wasn't the Selenite's fault. He was in the control cabin while *La Cucaracha* was still shuddering on the downswing of the last jump. Ts'ss was a tornado of motion, his multiple legs scrabbling frantically at a dozen instruments.

"I'll call the shot!" Hilton snapped, and Ts'ss instantly concentrated on the incredibly complicated controls that were guiding the ship into hyper.

The mate was at the auxiliary board. He jerked down levers.

"Hyper stations!" he shouted. "Close helmets! Grab the braces, you sun-jumpers! Here we go!"

A needle swung wildly across a gauge, hovering at the mark. Hilton dropped into a seat, sliding his arms under the curved braces and hooking his elbows around them. His ankles found similar supports beneath him. The visor screens blurred and shimmered with crawling colors, flicking back and forth, on and off, as *La Cucaracha* fought the see-saw between hyper and normal space.

Hilton tried another mike. "Captain Danvers. Hyper stations. All right?"

"Yeah, I'm in my suit," Danvers' voice said. "Can you take it? Need me? What's wrong with Ts'ss?"

"The vocor at my board blew out, Cap'n," Ts'ss said. "I couldn't reach the auxiliary."

"We must need an overhaul bad," Danvers said, and cut off.

Hilton grinned. "We need a rebuilding job," he muttered, and let his fingers hang over the control buttons, ready in case Ts'ss slipped.

But the Selenite was like a precision machine; he never slipped. The old *Cucaracha* shook in every brace. The atomic engines channeled fantastic amounts of energy into the dimensional gap. Then, suddenly, the see-saw balanced for an instant, and in that split-second the ship slid across its power-bridge and was no longer matter. It no longer existed, in the three-dimensional plane. To an observer, it would have vanished. But to an observer in hyper-space, it would have sprung into existence from white nothingness.

Except that there *were* no hyper-spatial observers. In fact, there wasn't anything in hyper—it was, as some scientist had once observed, just stuff, and nobody knew what the stuff was. It was possible to find out some of hyper's properties, but you couldn't go much farther than that. It was white, and it must have been energy, of a sort, for it flowed like an inconceivably powerful tide, carrying ships with it at speeds that would have destroyed the crew in normal space. Now, in the grip of the hyper current, *La Cucaracha* was racing toward the Big Night at a velocity that would take it past Pluto's orbit in a matter of seconds.

But you couldn't see Pluto. You had to work blind here, with instruments. And if you got on the wrong level, it was just too bad—for you!

Hastily Hilton checked the readings. This was Hyper C-758-R. That was right. On different dimensional levels of hyper, the flow ran in various directions. Coming back, they'd alter their atomic structure to ride Hyper M-75-L, which rushed from Fria toward Earth and beyond it.

"That's that," Hilton said, relaxing and reaching for a cigarette. "No meteors, no stress-strain problems—just drift till we get close to Fria. Then we drop out of hyper, and probably fall apart."

An annunciator clicked. Somebody said: "Mr. Hilton, there's some trouble."

"There is. Okay, Wiggins. What now?"

"One of the new men. He was out skinside making repairs."

"You had plenty of time to get back inside," snapped Hilton, who didn't feel quite as sure of that as he sounded. "I called hyper stations."

"Yes, sir. But this fella's new. Looks like he never rode a hyper-ship before. Anyhow, his leg's broken. He's in sick bay."

Hilton thought for a moment. *La Cucaracha* was understaffed anyway. Few good men would willingly ship on such an antique.

"I'll come down," he said, and nodded at Ts'ss. Then he went along the companionway, glancing in at the skipper, who had gone to sleep. He used the handholds to pull himself along, for there was no accelerative gravity in hyper. In sick bay he found

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the surgeon, who doubled in brass as cook, finishing a traction splint on a pale, sweating youngster who was alternately swearing feebly and groaning.

"What's the matter with him?" Hilton asked.

Bruno, the sawbones, gave a casual soft salute. "Simple fracture. I'm giving him a walker-splint, so he'll be able to get around. And he shot his cookies, so he can't be used to hyper."

"Looks like it," Hilton said, studying the patient. The boy opened his eyes, glared at Hilton.

"I was shanghaied!" he yelped. "I'll sue you for all you're worth!"

THE first officer was unperturbed.

"I'm not the skipper, I'm mate," Hilton said. "And I can tell you right now that we're not worth much. Ever hear about discipline?"

"I was shanghaied!"

"I know it. That's the only way we can get a full crew to sign articles on *La Cucaracha*. I mentioned discipline. We don't bother much with it here. Just the same, you'd better call me Mister when people are around. Now shut up and relax. Give him a sedative, Bruno."

"No! I want to send a spacegram!"

"We're in hyper. You can't. What's your name?"

"Saxon. Luther Saxon. I'm one of the consulting engineers on Transmat."

"The matter-transmission gang? What were you doing around the space-docks?"

Saxon gulped. "Well—uh—I go out with the technical crews to supervise new installations. We'd just finished a Venusian transmission station. I went out for a few drinks—that was all! A few drinks, and—"

"You went to the wrong place," Hilton said, amused. "Some crimp gave you a Mickey. Your name's on the articles, anyhow, so you're stuck, unless you jump ship. You can send a message from Fria, but it'd take a thousand years to reach Venus or Earth. Better stick around, and you can ride back with us."

"On this crate? It isn't safe. She's so old I've got the jitters every time I take a deep breath."

"Well, stop breathing," Hilton said curtly. *La Cucaracha* was an old tramp, of course, but he had shipped on her for a good many years. It was all right for this Transmat man to talk; the Transmat crews never ran any risks.

"Ever been on a hyper-ship before?" he asked.

"Naturally," Saxon said. "As a passenger! We have to get to a planet before we can install a transmission station, don't we?"

"Uh-huh." Hilton studied the scowling face on the pillow. "You're not a passenger now, though."

"My leg's broken."

"You got an engineering degree?"

Saxon hesitated and finally nodded.

"All right, you'll be assistant pilot. You won't have to walk much to do that. The pilot'll tell you what to do. You can earn your mess that way."

Saxon sputtered protests.

"One thing," Hilton said. "Better not tell the skipper you're a Transmat man. He'd hang you over one of the jets. Send him for'rd when he's fixed up, Bruno."

"Yessir," Bruno said, grinning faintly. An old deep-space man, he didn't like Transmat either.

Hilton pulled himself back to the control room. He sat down and watched the white visoscreens. Most of Ts'ss' many arms were idle. This was routine now.

"You're getting an assistant," Hilton said after a while. "Train him fast. That'll give us all a break. If that fat-headed Callistan pilot hadn't jumped on Venus, we'd be set."

"This is a short voyage," Ts'ss said. "It's a fast hyper-flow on this level."

"Yeah. This new guy. Don't tell the skipper, but he's a Transmat man."

Ts'ss laughed a little.

"That will pass, too," he said. "We're an old race, Mr. Hilton. Earthmen are babies compared to the Selenites. Hyper-ships are fading out, and eventually Transmat will fade out too, when something else comes."

"We won't fade," Hilton said, rather surprised to find himself defending the skipper's philosophy. "*Your* people haven't—you Selenites."

"Some of us are left, that's true," Ts'ss said softly. "Not many. The great days of the Selenite Empire passed very long ago. But there are still a few Selenites left, like me."

"You keep going, don't you? You can't kill off a—a race."

"Not easily. Not at once. But you can, eventually. And you can kill a tradition, too, though it may take a long time. But you know what the end will be."

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"Oh, shut up," Hilton said. "You talk too much."

Ts'ss bent again above the controls. *La Cucaracha* fled on through the white hyperflow, riding as smoothly as the day she had been launched.

BUT when they reached Fria, it would be rough space and high gravity. Hilton grimaced.

He thought: So what? This is just another voyage. The fate of the universe doesn't depend on it. Nothing depends on it, except, maybe, whether we make enough profit to have the old lady overhauled. And that won't matter to me for it's my last voyage into the Big Night.

He watched the screens. He could not see it, but he knew that it hung beyond the universal whiteness, in a plane invisible to his eyes. The little sparks of worlds and suns glowed in its immensity, but never brightened it. It was too vast, too implacable. And even the giant suns would be quenched in its ocean, in the end. As everything else would be quenched, as everything moved on the tides of time into that huge darkness.

That was progress. A wave was born and gathered itself and grew—and broke. A newer wave was behind it. And the old one slipped back and was lost forever. A few foam-flecks and bubbles remained, like Ts'ss, remnant of the giant wave of the ancient Selenite Empire.

The Empire was gone. It had fought and ruled a hundred worlds, in its day. But, in the end, the Big Night had conquered and swallowed it.

As it would swallow the last hyper-ship eventually. . . .

They hit Fria six days later, Earth time. And *hit* was the word. One of Ts'ss' chitin-covered arms was snapped off by the impact, but he didn't seem to mind. He couldn't feel pain, and he could grow another limb in a few weeks. The crew, strapped to their landing braces, survived with minor bruises.

Luther Saxon, the Transmat man, was in the auxiliary pilot's seat—he had enough specialized engineering training so that he learned the ropes fast—and he acquired a blue bump on his forehead, but that was all. *La Cucaracha* had come out of hyper with a jolt that strained her fat old carcass to the limit, and the atmosphere and gravity of Fria was the penultimate straw. Seams ripped, a jet went out, and new molten streaks appeared on the white-hot hull.

The crew had been expecting liberty. There was no time for that. Hilton told off working gangs to relieve each other at six-hour intervals, and he said, rather casually, that Twilight was out of bounds. He knew the crew would ignore that order. There was no way to keep the men aboard, while Twilight sold liquor and even more effective escape-mechanisms. Still, there were few women on Fria, and Hilton hoped that enough working stiffs would keep on the job to get *La Cucaracha* repaired and spaceworthy before the fungus cargo was loaded.

He knew that Wiggins, the second mate, would do his best. For himself he went with the skipper in search of Christie, the Fria trader. The way led through Twilight, the roofed setlement that was shielded from the hot, diamond-bright glare of the primary. It wasn't big. But then Fria was an outpost, with a floating population of a few hundred. They came in and out with the ships and the harvest seasons. If necessary, Hilton thought, some of the bums could be shanghaied. Still, it wasn't too likely that any of the crew would desert. None of them would be paid off till they were back in the Solar System.

They found Christie in his plasticoid cabin, a fat, bald, sweating man puffing at a huge meerschaum pipe. He looked up, startled, and then resignedly leaned back in his chair and waved them to seats.

"Hello Chris," Danvers said. "What's new?"

"Hello, Skipper. Hi, Logger. Have a good trip?"

"The landing wasn't so good," Hilton said.

"Yeah, I heard about it. Drinks?"

"Afterward," Danvers said, though his eyes gleamed. "Let's clean up the business first. Got a good shipment ready?"

Christie smoothed one of his fat, glistening cheeks. "Well—you're a couple of weeks early."

"You keep a stock-pile."

The trader grunted. "Fact is—look, didn't you get my message? No, I guess there wasn't time. I sent a spacemail on the *Blue Sky* last week for you, Skipper."

Hilton exchanged glances with Danvers.

"You sound like bad news, Chris," he said. "What is it?"

Christie said uncomfortably, "I can't help it. You can't meet competition like Transmat. You can't afford to pay their prices. You got running expenses on *La Cucaracha*.

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Jet-fuel costs dough, and—well, Transmat sets up a transmitting station, pays for it, and the job's done, except for the power outlay. With atomic, what does that amount to?"

DANVERS was growing red.

"Is Transmat setting up a station here?" Hilton said hastily.

"Yeah. I can't stop 'em. It'll be ready in a couple of months."

"But why?" The fungus isn't worth it. There isn't enough market. You're pulling a bluff, Chris. What do you want? A bigger cut?"

Christie regarded his meerschaum. "Nope. Remember the ore tests twelve years ago? There's valuable ores on Fria, Logger. Only it's got to be refined plenty. Otherwise it's too bulky for shipment. And the equipment would cost too much to freight by spaceship. It's big stuff—I mean big."

Hilton glanced at Danvers. The skipper was purple now, but his mouth was clamped tightly.

"But—hold on, Chris. How can Transmat get around that? By sending the crude ores to Earth in their gadgets?"

"The way I heard it," Christie said, "is that they're going to send the refining machines here and set 'em up right on Fria. All they need for that is one of their transmitters. The field can be expanded to take almost anything, you know. Shucks you could move a planet that way if you had the power! They'll do the refining here and transmit the refined ores back Earthside."

"So they want ores," Danvers said softly. "They don't want the fungus, do they?"

Christie nodded. "It looks like they do. I had an offer. A big one. I can't afford to turn it down, and you can't afford to meet it, Skipper. You know that as well as I do. Thirteen bucks a pound."

Danvers snorted. Hilton whistled.

"No, we can't meet that," he said. "But how can they afford to pay it?"

"Quantity. They channel everything through their transmitters. They set one up on a world, and there's a door right to Earth—or any planet they name. One job won't net them much of a profit, but a million jobs—and they take everything! So what can I do, Logger?"

Hilton shrugged. The captain stood up abruptly.

Christie stared at his pipe.

"Look, Skipper. Why not try the Orion Secondaries? I heard there was a bumper crop of bluewood gum there."

"I heard that a month ago," Danvers said. "So did everybody else. It's cleaned out by now. Besides, the old lady won't stand a trip like that. I've got to get an overhaul fast, and a good one, back in the System."

There was a silence. Christie was sweating harder than ever. "What about that drink?" he suggested. "We can maybe figure a way."

"I can still pay for my own drinks," Danvers lashed out. He swung around and was gone.

"Jehoshaphat, Logger!" Christie said. "What could I do?"

"It's not your fault, Chris," Hilton said. "I'll see you later, unless—anyhow, I'd better get after the skipper. Looks like he's heading for Twilight."

He followed Danvers, but already he had lost hope.

CHAPTER III

Danvers Lays the Course

TWO days later the skipper was still drunk.

In the half-dusk of Twilight Hilton went into a huge, cool barn where immense fans kept the hot air in circulation, and found Danvers, as usual, at a back table, a glass in his hand. He was talking to a tiny-headed Canopian, one of that retrovolved race that is only a few degrees above the moron level. The Canopian looked as though he was covered with black plush, and his red eyes glowed startlingly through the fur. He, too, had a glass.

Hilton walked over to the two. "Skipper," he said.

"Blow," Danvers said. "I'm talking to this guy."

Hilton looked hard at the Canopian and jerked his thumb. The red-eyed shadow picked up his glass and moved away quickly. Hilton sat down.

"We're ready to jet off," he said.

Danvers blinked at him blearily. "You interrupted me, mister. I'm busy."

"Buy a case and finish your binge aboard," Hilton said. "If we don't jet soon, the crew will jump."

"Let 'em."

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"Okay. Then who'll work *La Cucaracha* back to Earth?"

"If we go back to Earth, the old lady will land on the junk-pile," Danvers said furiously. "The ITC won't authorize another voyage without a rebuilding job."

"You can borrow dough."

"Ha!"

Hilton let out his breath with a sharp, angry sound. "Are you sober enough to understand me? Then listen. I've talked Saxon around."

"Who's Saxon?"

"He was shanghaied on Venus. Well—he's a Transmat engineer." Hilton went on quickly before the skipper could speak. "That was a mistake. The crimp's mistake and ours. Transmat stands behind its men. Saxon looked up the Transmat crew on Fria, and their superintendent paid me a visit. We're in for trouble. A damage suit. But there's one way out. No hyper-ship's due to hit Fria for months and the matter-transmitter won't be finished within two months. And it seems Trasmat has a shortage of engineers. If we can get Saxon back to Venus or Earth fast, he'll cover. There'll be no suit."

"Maybe he'll cover. But what about Transmat?"

"If Saxon won't sign a complaint, what can they do?" Hilton shrugged. "It's our only out now."

Danvers' brown-splotched fingers played with his glass.

"A Transmat man," he muttered. "Ah-h. So we go back Earthside. What then? We're stuck." He looked under his drooping lids at Hilton. "I mean *I'm* stuck. I forgot you're jumping after this voyage."

"I'm not jumping. I sign for one voyage at a time. What do you want me to do, anyhow?"

"Do what you like. Run out on the old lady. You're no deep-space man." Danvers spat.

"I know when I'm licked," Hilton said. "The smart thing then is to fight in your own weight, when you're outclassed on points, not wait for the knockout. You've had engineering training. You could get on with Transmat, too."

For a second Hilton thought the skipper was going to throw the glass at him. Then Danvers dropped back in his chair, trying to force a smile.

"I shouldn't blow my top over that," he said, with effort. "It's the truth."

"Yeah. Well—are you coming?"

"The old lady's ready to jet off?" Danvers said. "I'll come, then. Have a drink with me first."

"We haven't time."

With drunken dignity Danvers stood up. "Don't get too big for your boots, mister. The voyage isn't over yet. I said have a drink! That's an order."

"Okay, okay!" Hilton said. "One drink. Then we go?"

"Sure."

Hilton gulped the liquor without tasting it. Rather too late, he felt the stinging ache on his tongue. But before he could spring to his feet, the great dim room folded down upon him like a collapsing umbrella, and he lost consciousness with the bitter realization that he had been Mickeyed like the rawest greenhorn. But the skipper had poured that drink. . . .

THE dreams were confusing. He was fighting something, but he didn't know what. Sometimes it changed its shape, and sometimes it wasn't there at all, but it was always enormous and terribly powerful.

He wasn't always the same, either. Sometimes he was the wide-eyed kid who had shipped on *Starhopper*, twenty-five years ago, to take his first jump into the Big Night. Then he was a little older, in a bos'n's berth, his eye on a master's ticket, studying, through the white, unchangeable days and nights of hyper-space, the intricate logarithms a skilled pilot must know.

He seemed to walk on a treadmill toward a goal that slid away, never quite within reach. But he didn't know what that goal was. It shone like success. Maybe it was success. But the treadmill had started moving before he'd really got started. In the Big Night a disembodied voice was crying thinly:

"You're in the wrong game, Logger. Thirty years ago you'd have a future in hyper-ships. Not any more. There's a new wave coming up. Get out, or drown."

A red-eyed shadow leaned over him. Hilton fought out of his dream. Awkwardly he jerked up his arm and knocked away the glass at his lips. The Canopian let out a shrill, harsh cry. The liquid that had been in the glass was coalescing in midair into a shining sphere.

The glass floated—and the Canopian floated too. They were in hyper. A few lightweight straps held Hilton to his bunk, but this was

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his own cabin, he saw. Dizzy, drugged weakness swept into his brain.

The Canopian struck a wall, pushed strongly, and the recoil shot him toward Hilton. The mate ripped free from the restraining straps. He reached out and gathered in a handful of furry black plush. The Canopian clawed at his eyes.

"Captain!" he screamed. "Captain Danvers!"

Pain gouged Hilton's cheek as his opponent's talons drew blood. Hilton roared with fury. He shot a blow at the Canopian's jaw, but now they were floating free, and the punch did no harm. In midair they grappled, the Canopian incessantly screaming in that thin, insane shrilling.

The door-handle clicked twice. There was a voice outside—Wiggins, the second. A deep thudding came. Hilton, still weak, tried to keep the Canopian away with jolting blows. Then the door crashed open, and Wiggins pulled himself in.

"Dzann!" he said. "Stop it!" He drew a jet-pistol and leveled it at the Canopian.

On the threshold was a litle group. Hilton saw Saxon, the Transmat man, gaping there, and other crew-members, hesitating, unsure. Then, suddenly, Captain Danvers' face appeared behind the others, twisted, strained with tension.

The Canopian had retreated to a corner and was making mewing, frightened noises.

"What happened, Mr. Hilton?" Wiggins said. "Did this tomcat jump you?"

Hilton was so used to wearing deepspace armor that till now he had scarcely realized its presence. His helmet was hooded back, like that of Wiggins and the rest. He pulled a weight from his belt and threw it aside; the reaction pushed him toward a wall where he gripped a brace.

"Does he go in the brig?" Wiggins asked.

"All right, men," Danvers said quietly. "Let me through." He propelled himself into Hilton's cabin. Glances of discomfort and vague distrust were leveled at him. The skipper ignored them.

"Dzann!" he said. "Why aren't you wearing your armor? Put it on. The rest of you—get to your stations. You too, Mr. Wiggins. I'll handle this."

Still Wiggins hesitated. He started to say something.

"What are you waiting for?" Hilton said. "Tell Bruno to bring some coffee. Now beat it." He maneuvered himself into a sitting position on his bunk. From the tail of his eye he saw Wiggins and the others go out. Dzann, the Canopian, had picked up a suit from the corner and was awkwardly getting into it.

Danvers carefully closed the door, testing the broken lock.

"Got to have that fixed," he murmured. "It isn't shipshape this way." He found a brace and stood opposite the mate, his eyes cool and watchful, the strain still showing on his tired face. Hilton reached for a cigarette.

"Next time your tomcat jumps me, I'll burn a hole through him," he promised.

"I stationed him here to guard you, in case there was trouble," Danvers said. "To take care of you if we cracked up or ran into danger. I showed him how to close your helmet and start the oxygen."

"Expect a half-witted Canopian to remember that?" Hilton said. "You also told him to keep drugging me." He reached toward the shining liquid sphere floating near by and pushed a forefinger into it. He tasted the stuff. "Sure. *Vakheesh*. That's what you slipped in my drink on Fria. Suppose you start talking, skipper. What's this Canopian doing aboard?"

"I signed him," Danvers said.

"For what? Supercargo?"

DANVERS answered that emotionlessly, watching Hilton.

"Cabin-boy."

"Yeah. What did you tell Wiggins? About me, I mean?"

"I said you'd got doped up," Danvers said, grinning. "You were doped, too."

"I'm not now." Hilton's tone rang hard. "Suppose you tell me where we are? I can find out. I can get the equations from Ts'ss and run chart-lines. Are we on M-Seventy-Five-L?"

"No, we're not. We're riding another level."

"Where to?"

The Canopian shrilled, "I don't know name. Has no name. Double sun it has."

"You crazy!" Hilton glared at the skipper. "Are you heading us for a double primary?"

Danvers still grinned. "Yeah. Not only that, but we're going to land on a planet thirty thousand miles from the suns—roughly."

Hilton flicked on his deadlight and looked at white emptiness.

"Closer than Mercury is to Sol. You can't

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do it. How big are the primaries?"

Danvers told him.

"All right. It's suicide. You know that. *La Cucaracha* won't take it."

"The old lady will take anything the Big Night can hand out."

"Not this. Don't kid yourself. She might have made it back to Earth—with a Lunar landing—but you're riding into a meat-grinder."

"I haven't forgotten my astrogation," Danvers said. "We're coming out of hyper with the planet between us and the primaries. The pull will land us."

"In small pieces," Hilton agreed. "Too bad you didn't keep me doped. If you keep your mouth shut, we'll replot our course to Earth and nobody'll get hurt. If you want to start something, it'll be mutiny, and I'll take my chances at Admiralty."

The captain made a noise that sounded like laughter.

"All right," he said, "Suit yourself. Go look at the equations. I'll be in my cabin when you want me. Come on, Dzann."

He pulled himself into the companionway, the Canopian gliding behind him as silently as a shadow.

Hilton met Bruno with coffee as he followed Danvers. The mate grunted, seized the covered cup, and sucked in the liquid with the deftness of long practise under anti-gravity conditions. Bruno watched him.

"All right, sir?" the cook-surgeon said.

"Yeah. Why not?"

"Well—the men are wondering."

"What about?"

"I dunno, sir. You've never—you've always commanded the launchings, sir. And that Canopian—the men don't like him. They think something's wrong."

"Oh, they do, do they?" Hilton said grimly. "I'll come and hold their hands when they turn in for night-watch. They talk too much."

He scowled at Bruno and went on toward the control room. Though he had mentioned mutiny to the skipper, he was too old a hand to condone it, except in extremity. And discipline had to be maintained, even though Danvers had apparently gone crazy.

Ts'ss and Saxon were at the panels. The Selenite slanted a glittering stare at him, but the impassive mask under the audio-filter showed no expression. Saxon, however, swung around and began talking excitedly.

"What's happened, Mr. Hilton? Something's haywire. We should be ready for an Earth-landing by now. But we're not. I don't know enough about these equations to chart back, and Ts'ss won't tell me a blamed thing."

"There's nothing to tell," Ts'ss said. Hilton reached past the Selenite and picked up a folder of ciphered figures. He said absently to Saxon:

"Pipe down. I want to concentrate on this."

He studied the equations.

He read death in them.

CHAPTER IV

Gamble With Death

LOGGER HILTON went into the skipper's cabin, put his back against the wall, and started cursing fluently and softly. When he had finished, Danvers grinned at him.

"Through?" he asked.

Hilton switched his stare to the Canopian, who was crouched in a corner, furtively loosening the locks of his spacesuit.

"That applies to you, too, tomcat," he said.

"Dzann won't mind that," Danvers said. "He isn't bright enough to resent cussing. And I don't care, as long as I get what we want. Still going to mutiny and head for Earth?"

"No, I'm not," Hilton said. With angry patience he ticked off points on his fingers. "You can't switch from one hyper-plane to another without dropping into ordinary space first, for the springboard. If we went back into normal space, the impact might tear *La Cucaracha* into tiny pieces. We'd be in suits, floating free, a hundred million miles from the nearest planet. Right now we're in a fast hyper-flow heading for the edge of the universe, apparently."

"There's one planet within reach," Danvers said.

"Sure. The one that's thirty thousand miles from a double primary. And nothing else."

"Well? Suppose we do crack up? We can make repairs once we land on a planet. We can get the materials we need. You can't do that in deep space. I know landing on this world will be a job. But it's that or nothing—now."

"What are you after?"

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Danvers began to explain:

"This Canopian—Dzann—he made a voyage once, six years ago. A tramp hyperships. The controls froze, and the tub was heading for outside. They made an emergency landing just in time—picked out a planet that had been detected and charted, but never visited. They repaired there, and came back into the trade routes. But there was a guy aboard, an Earthman who was chummy with Dzann. This guy was smart, and he'd been in the drug racket, I think. Not many people know what raw, growing *paraine* looks like, but this fellow knew. He didn't tell anybody. He took samples, intending to raise money, charter a ship, and pick up a cargo later. But he was knifed in some dive on Callisto. He didn't die right away, though, and he liked Dzann. So he gave Dzann the information."

"That halfwit?" Hilton said. "How could he remember a course?"

"That's one thing the Canopians can remember. They may be morons, but they're fine mathematicians. It's their one talent."

"It was a good way for him to bum a drink and get a free berth," Hilton said.

"No. He showed me the samples. I can talk his lingo, a little, and that's why he was willing to let me in on his secret, back on Fria. Okay. Now. We land on this planet—it hasn't been named—and load a cargo of *paraine*. We repair the old lady, if she needs it—"

"She will!"

"And then head back."

"To Earth?"

"I think Silenus. It's an easier landing."

"Now you're worrying about landings," Hilton said bitterly. "Well, there's nothing I can do about it, I suppose. I'm stepping out after this voyage. What's the current market quotation on *paraine*?"

"Fifty a pound. At Medical Center, if that's what you mean."

"Big money," the mate said. "You can buy a new ship with the profits and still have a pile left for happy days."

"You'll get your cut."

"I'm still quitting."

"Not till this voyage is over," Danvers said. "You're mate on *La Cucaracha*." He chuckled. "A deep-space man has plenty of tricks up his sleeve—and I've been at it longer than you."

"Sure," Hilton said. "You're smart. But you forgot Saxon. He'll throw that damage suit against you now, with Transmat behind him."

Danvers merely shrugged. "I'll think of something. It's your watch. We have about two hundred hours before we come out of hyper. Take it, mister."

He was laughing as Hilton went out. . . .

In two hundred hours a good deal can happen. It was Hilton's job to see that it didn't. Luckily, his reappearance had reassured the crew, for when masters fight, the crew will hunt for trouble. But with Hilton moving about *La Cucaracha*, apparently as casual and assured as ever, even the second mate, Wiggins, felt better. Still, it was evident that they weren't heading for Earth. It was taking too long.

THE only real trouble came from Saxon, and Hilton was able to handle that. Not easily, however. It had almost come to a showdown, but Hilton was used to commanding men, and finally managed to bluff the Transmat engineer. Dissatisfied but somewhat cowed, Saxon grumblingly subsided.

Hilton called him back.

"I'll do my best for you, Saxon. But we're in the Big Night now. You're not in civilized space. Don't forget that the skipper knows you're a Transmat man, and he hates your insides. On a hyper-ship, the Old Man's word is law. So—for your own sake—watch your step!"

Saxon caught the implication. He paled slightly, and after that managed to avoid the captain.

Hilton kept busy checking and rechecking *La Cucaracha*. No outside repairs could be done in hyper, for there was no gravity, and ordinary physical laws were inoperative—magnetic shoes, for example, wouldn't work. Only in the ship itself was there safety. And that safety was illusory for the racking jars of the spatial see-saw might disintegrate *La Cucaracha* in seconds.

Hilton called on Saxon. Not only did he want technical aid, but he wanted to keep the man busy. So the pair worked frantically over jury-rigged systems that would provide the strongest possible auxiliary bracing for the ship. Torsion, stress and strain were studied, the design of the craft analyzed, and structural alloys X-ray tested.

Some flaws were found—*La Cucaracha* was a very old lady—but fewer than Hilton expected. In the end, it became chiefly a matter of ripping out partitions and bulk-

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heads and using the material for extra bracing.

But Hilton knew, and Saxon agreed with him, that it would not be enough to cushion the ship's inevitable crash.

There was one possible answer. They sacrificed the after section of the craft. It could be done, though they were racing against time. The working crews mercilessly cut away beams from aft and carried them forward and welded them into position, so that, eventually, the forward half of the ship was tremendously strong and cut off, by tough air-tight partitions, from a skeleton after-half. And that half Hilton flooded with manufactured water, to aid in the cushioning effect.

Danvers, of course, didn't like it. But he had to give in. After all, Hilton was keeping the ship on the skipper's course, insanely reckless as that was. If *La Cucaracha* survived, it would be because of Hilton. But Captain Danvers shut himself in his cabin and was sullenly silent.

Toward the end, Hilton and Ts'ss were alone in the control room, while Saxon, who had got interested in the work for its own sake, superintended the last-minute jobs of spot-bracing. Hilton, trying to find the right hyper-space level that would take them back to Earth after they had loaded the *paraine* cargo, misplaced a denial point and began to curse in a low, furious undertone.

He heard Ts'ss laugh softly and whirled on the Selenite.

"What's so funny?" he demanded.

"It's not really funny, sir," Ts'ss said. "There have to be people like Captain Danvers, in any big thing."

"What are you babbling about now?" he asked curiously.

Ts'ss shrugged. "The reason *I* keep shipping on *La Cucaracha* is because I can be busy and efficient aboard, and planets aren't for Selenites any more. We've lost our own world. It died long ago. But I still remember the old traditions of our Empire. If a tradition ever becomes great, it's because of the men who dedicate themselves to it. That's why anything ever became great. And it's why hyper-ships came to mean something, Mr. Hilton. There were men who lived and breathed hyper-ships. Men who worshipped hyper-ships, as a man worships a god. Gods fall, but a few men will still worship at the old altars. They can't change. If they were capable of changing, they wouldn't have been the type of men to make their gods great."

"Been burning *paraine?*" Hilton demanded unpleasantly. His head ached, and he didn't want to find excuses for the skipper.

"It's no drug-dream," Ts'ss said. "What about the chivalric traditions? We had our Chyra Emperor, who fought for—"

"I've read about Chyra," Hilton said. "He was a Selenite King Arthur."

SLOWLY Ts'ss nodded his head, keeping his great eyes on Hilton.

"Exactly. A tool who was useful in his time, because he served his cause with a single devotion. But when that cause died, there was nothing for Chyra—or Arthur—to do except die too. But until he did die, he continued to serve his broken god, not believing that it had fallen. Captain Danvers will never believe the hyper-ships are passing. He will be a hyper-ship man until he dies. Such men make causes great—but when they outlive their cause, they are tragic figures."

"Well, I'm not that crazy," Hilton growled. "I'm going into some other game. Transmat or something. Your'e a technician. Why don't you come with me after this voyage?"

"I like the Big Night," Ts'ss said. "And I have no world of my own—no living world. There is nothing to—to make me want success, Mr. Hilton. On *La Cucaracha* I can do as I want. But away from the ship, I find that people don't like Selenites. We are too few to command respect or friendship any more. And I'm quite old, you know."

Startled, Hilton stared at the Selenite. There was no way to detect signs of age on the arachnoid beings. But they always knew, infallibly, how long they had to live, and could predict the exact moment of their death.

Well, *he* wasn't old. And he wasn't a deep-space man as Danvers was. He followed no lost causes. There was nothing to keep him with the hyper-ships, after this voyage, if he survived.

A signal rang. Hilton's stomach jumped up and turned into ice, though he had been anticipating this for hours. He reached for a mike.

"Hyper stations! Close helmets! Saxon, report!"

"All work completed, Mr. Hilton," said Saxon's voice, strained but steady.

"Come up here. May need you. General

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call: stand by! Grab the braces. We're coming in."

Then they hit the see-saw!

CHAPTER V

Hilton's Choice

NO DOUBT about it, she was tough—that old lady. She'd knocked around a thousand worlds and ridden hyper for more miles than a man could count. Something had got into her from the Big Night, something stronger than metal bracing and hard alloys. Call it soul, though there never was a machine that had a soul. But since the first log-craft was launched on steaming seas, men have known that a ship gets a soul—from somewhere.

She hopped like a flea. She bucked like a mad horse. Struts and columns snapped and buckled, and the echoing companionways were filled with an erratic crackling and groaning as metal, strained beyond its strength, gave way. Far too much energy rushed through the engines. But the battered old lady took it and staggered on, lurching, grunting, holding together somehow.

The see-saw bridged the gap between two types of space, and *La Cucaracha* yawed wildly down it, an indignity for an old lady who, at her age, should ride sedately through free void—but she was a hyper-ship first and a lady second. She leaped into normal space. The skipper had got his figures right. The double sun wasn't visible, for it was eclipsed by the single planet, but the pull of that monstrous twin star clamped down like a giant's titanic fist closing on *La Cucaracha* and yanking her forward irresistibly.

There was no time to do anything except stab a few buttons. The powerful rocket-jets blazed from *La Cucaracha's* hull. The impact stunned every man aboard. No watcher saw, but the automatic recording charts mapped what happened then.

La Cucaracha struck what was, in effect, a stone wall. Not even that could stop her. But it slowed her enough for the minimum of safety, and she flipped her stern down and crashed on the unnamed planet with all her after jets firing gallantly, the flooded compartments cushioning the shock, and a part of her never made of plastic or metal holding her together against even that hammer-blow struck at her by a world.

Air hissed out into a thinner atmosphere and dissipated. The hull was half molten. Jet-tubes were fused at a dozen spots. The stern was hash.

But she was still—a ship.

The loading of cargo was routine. The men had seen too many alien planets to pay much attention to this one. There was no breathable air, so the crew worked in their suits—except for three who had been injured in the crash, and were in sick-bay, in a replenished atmosphere within the sealed compartments of the ship. But only a few compartments were so sealed. *La Cucaracha* was a sick old lady, and only first aid could be administered here.

Danvers himself superintended that. *La Cucaracha* was his own, and he kept half the crew busy opening the heat-sealed jets, doing jury-rig repairs, and making the vessel comparatively spaceworthy. He let Saxon act as straw-boss, using the engineer's technical knowledge, though his eyes chilled whenever he noticed the Transmat man.

As for Hilton, he went out with the other half of the crew to gather the *paraine* crop. They used strong-vacuum harvesters, running long, flexible carrier tubes back to *La Cucaracha's* hold, and it took two weeks of hard, driving effort to load a full cargo. But by then the ship was bulging with *paraine*, the repairs were completed, and Danvers had charted the course to Silenus.

Hilton sat in the control room with Ts'ss and Saxon. He opened a wall compartment, glanced in, and closed it again. Then he nodded at Saxon.

"The skipper won't change his mind," he said. "Silenus is our next port. I've never been there."

"I have," Ts'ss said. "I'll tell you about it later."

Saxon drew an irritated breath. "You know what the gravity-pull is, then, Ts'ss. I've never been there either, but I've looked it up in the books. Giant planets, mostly, and you can't come from hyper into normal space after you've reached the radius. There's no plane of the ecliptic in that system. It's crazy. You have to chart an erratic course toward Silenus, fighting varying gravities from a dozen planets all the way, and then you've still got the primary's pull to consider. You know *La Cucaracha* won't do it, Mr. Hilton."

"I know she won't," Hilton said. "We

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pushed our luck this far, but any more would be suicide. She simply won't hold together for another run. We're stranded here. But the skipper won't believe that."

"He's insane," Saxon said. "I know the endurance limits of a machine—that can be found mathematically—and this ship's only a machine. Or do you agree with Captain Danvers? Maybe you think she's alive!"

SAXON was forgetting discipline, but Hilton knew what strain they were all under.

"No, she's a machine all right," he merely said. "And we both know she's been pushed too far. If we go to Silenus, it's—" He made a gesture of finality.

"Captain Danvers says—Silenus," Ts'ss murmured. "We can't mutiny, Mr. Hilton."

"Here's the best we can do," Hilton said. "Get into hyper somehow, ride the flow, and get out again somehow. But then we're stuck. Any planet or sun with a gravity pull would smash us. The trouble is, the only worlds with facilities to overhaul *La Cucaracha* are the big ones. And if we don't get an overhaul fast we're through. Saxon, there's one answer, though. Land on an asteroid."

"But why?"

"We could manage that. No gravity to fight, worth mentioning. We certainly can't radio for help, as the signals would take years to reach anybody. Only hyper will take us fast enough. Now—has Transmat set up any stations on asteroids?"

Saxon opened his mouth and closed it again.

"Yes. There's one that would do, in the Rigel system. Far out from the primary. But I don't get it. Captain Danvers wouldn't stand for that."

Hilton opened the wall compartment. Gray smoke seeped out.

"This is *paraine*," he said. "The fumes are being blown into the skipper's cabin through his ventilator. Captain Danvers will be para-happy till we land on that Rigel asteroid, Saxon."

There was a little silence. Hilton suddenly slammed the panel shut.

"Let's do some charting," he said. "The sooner we reach the Rigel port, the sooner we can get back to Earth—via Transmat."

Curiously, it was Saxon who hesitated.

"Mr. Hilton. Wait a minute. Transmat—I know I work for the outfit, but they—they're sharp. Business men. You have to pay plenty to use their matter-transmitters."

"They can transmit a hyper-ship, can't they? Or is it too big a job?"

"No, they can expand the field enormously. I don't mean that. I mean they'll want payment, and they'll put on the squeeze. You'll have to give up at least half of the cargo."

"There'll still be enough left to pay for an overhaul job."

"Except they'll want to know where the *paraine* came from. You'll be over a barrel. You'll *have* to tell them, eventually. And that'll mean a Transmat station will be set up right here, on this world."

"I suppose so," Hilton said quietly. "But the old lady will be spaceworthy again. When the skipper sees her after the overhaul, he'll know it was the only thing to do. So let's get busy."

"Remind me to tell you about Silenus," Ts'ss said.

* * * * *

The Lunar Refitting Station is enormous. A crater has been roofed with a transparent dome, and under it the hyper-ships rest in their cradles. They come in battered and broken, and leave clean and sleek and strong, ready for the Big Night again. *La Cucaracha* was down there, no longer the groaning wreck that had settled on the Rigel asteroid, but a lovely lady, shining and beautiful.

Far above, Danvers and Hilton leaned on the railing and watched.

"She's ready to jet," Hilton said idly. "And she looks good."

"No thanks to you, mister."

"Tush for that!" Hilton said. "If I hadn't doped you, we'd be dead and *La Cucaracha* floating around in space in pieces. Now look at her."

"Yeah. Well, she does look good. But she won't carry another *paraine* cargo. That strike was mine. If you hadn't told Transmat the location, we'd be set." Danvers grimaced. "Now they're setting up a Transmat station there; a hyper-ship can't compete with a matter transmitter."

"There's more than one world in the Galaxy."

"Sure. Sure." But Danvers' eyes brightened as he looked down.

"Where are you heading, Skipper?" Hilton said.

"What's it to you? You're taking that Transmat job, aren't you?"

"You bet. I'm meeting Saxon in five min-

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utes. In fact, we're going down to sign the contracts. I'm through with deep space. But —where are you heading?"

"I don't know," Danvers said. "I thought I might run up around Arcturus and see what's stirring."

HILTON did not move for a long time. Then he spoke without looking at the captain.

"You wouldn't be thinking of a stopover at Canis after that, would you?"

"No."

"You're a liar."

"Go keep your appointment," Danvers said.

Hilton eyed the great hyper-ship below. "The old lady's always been a nice, clean craft. She's never got out of line. She's always charted a straight course. It'd be too bad if she had to carry slaves from Arcturus to the Canis market. It's illegal, of course, but that isn't the point. It's a rotten, crooked racket."

"I didn't ask your advice, mister!" Danvers flared. "Nobody's talking about slave-running!"

"I suppose you weren't figuring on unloading the *paraine* at Silenus? You can get a good price for *paraine* from Medical Center, but you can get six times the price from the drug ring on Silenus. Yeah, Ts'ss told me. He's been on Silenus."

"Oh, shut up," Danvers said.

Hilton tilted back his head to stare through the dome at the vast darkness above. "Even if you're losing a fight, it's better to fight clean," he said. "Know where it'd end?"

Danvers looked up, too, and apparently saw something in the void that he didn't like.

"How can you buck Transmat?" he demanded. "You've got to make a profit somehow."

"There's an easy, dirty way, and there's a clean, hard way. The old lady had a fine record."

"You're not a deep-space man. You never were. Beat it! I've got to get a crew together!"

"Listen—" Hilton said. He paused. "Ah, the devil with you. I'm through."

He turned and walked away through the long steel corridor.

Ts'ss and Saxon were drinking highballs at the Quarter Moon. Through the windows they could see the covered way that led to the Refitting Station, and beyond it the crags of a crater-edge, with the star-shot darkness hanging like a backdrop. Saxon looked at his watch.

"He isn't coming," Ts'ss said.

The Transmat man moved his shoulders impatiently. "No. You're wrong. Of course, I can understand your wanting to stay with *La Cucaracha*."

"Yes, I'm old. That's one reason."

"But Hilton's young, and he's smart. He's got a big future ahead of him. That guff about sticking to an ideal—well, maybe Captain Danvers is that sort of man, but Hilton isn't. He isn't in love with hyper-ships."

Ts'ss turned his goblet slowly in his curious fingers. "You are wrong about one thing, Saxon. I'm not shipping on *La Cucaracha*."

Saxon stared. "But I thought—why not?"

"I will die within a thousand Earth hours," Ts'ss said softly. "When that time comes, I shall go down into the Selenite caverns. Not many know they exist, and only a few of us know the secret caves, the holy places of our race. But I know. I shall go there to die, Saxon. Every man has one thing that is strongest—and so it is with me. I must die on my own world. As for Captain Danvers, he follows his cause, as our Chyra Emperor did, and as your King Arthur did. Men like Danvers made hyper-ships great. Now the cause is dead, but the type of men who made it great once can't change their allegiance. If they could, they would never have spanned the Galaxy with their ships. So Danvers will stay with *La Cucaracha*. And Hilton—"

"He's not a fanatic! He won't stay. Why should he?"

"In our legends Chyra Emperor was ruined, and his Empire broken," Ts'ss said. "But he fought on. There was one who fought on with him, though he did not believe in Chyra's cause. A Selenite named Jailyra. Wasn't there—in your legends—a Sir Lancelot? He didn't believe in Arthur's cause either, but he was Arthur's friend. So he stayed. Yes, Saxon, there are the fanatics who fight for what they believe—but there are also the others, who do not believe, and who fight in the name of a lesser cause. Something called friendship."

Saxon laughed and pointed out the window. "You're wrong, Ts'ss," he said triumphantly. "Hilton's no fool. For here he comes."

Hilton's tall form was visible moving quickly along the way. He passed the window and vanished. Saxon turned to the door.

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THERE was a pause.

"Or, perhaps, it isn't a lesser cause," Ts'ss said. "For the Selenite Empire passed, and Arthur's court passed, and the hyperships are passing. Always the Big Night takes them, in the end. But this has gone on since the beginning—"

"What?"

This time Ts'ss pointed.

Saxon leaned forward to look. Through the angle of the window he could see Hilton, standing motionless on the ramp. Passersby streamed about him unnoticed. He was jostled, and he did not know it. Hilton was thinking.

They saw the look of deep uncertainty on his face. They saw his face suddenly clear. Hilton grinned wryly to himself. He had made up his mind. He turned and went rapidly back the way he had come.

Saxon stared after the broad, retreating back, going the way it had come, toward the Refitting Station where Danvers and *La Cucaracha* waited. Hilton—going back where he had come from, back to what he had never really left.

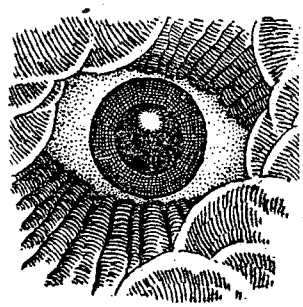
"The crazy fool!" Saxon said. "He can't be doing this! Nobody turns down jobs with Transmat!"

Ts'ss gave him a wise, impassive glance. "You believe that," he said. "Transmat means much to you. Transmat needs men like you, to make it great—to keep it growing. You're a lucky man, Saxon. You're riding with the tide. A hundred years from now—two hundred—and you might be standing in Hilton's shoes. Then you'd understand."

Saxon blinked at him. "What do you mean?"

"Transmat is growing now," Ts'ss said gently. "It will be very great—thanks to men like you. But for Transmat too, there will come an end."

He shrugged, looking out beyond the crater's rim with his inhuman, faceted eyes, at the glittering points of light which, for a little while, seemed to keep the Big Night at bay.



THE EYE OF DESTRUCTION!

IT WAS during the perilous era after the Three-Hour War that a sudden red emergency signal came, sending the scientists of the Biological Control Labs to their scanners to ascertain the cause of the trouble.

And then it appeared—an eye that stared at them through pale clouds of mist! Otherwise, there were no signs of activity in the four hundred and three Rings which hovered over the world with their potential deadliness. But once the eye was sighted, strange things began to happen—and men had to engage in their greatest fight for survival!

The story of this mighty battle is told in ATOMIC, by Henry Kuttner, an amazing complete novelet coming in the next issue. It's an epic of heroism and adventure—of courageous action against tremendous odds—and it will hold you enthralled from start to finish!

ATOMIC is one of the best yarns Henry Kuttner has ever written—and it's only one of the many gripping and unusual stories which appear in our gala next issue!

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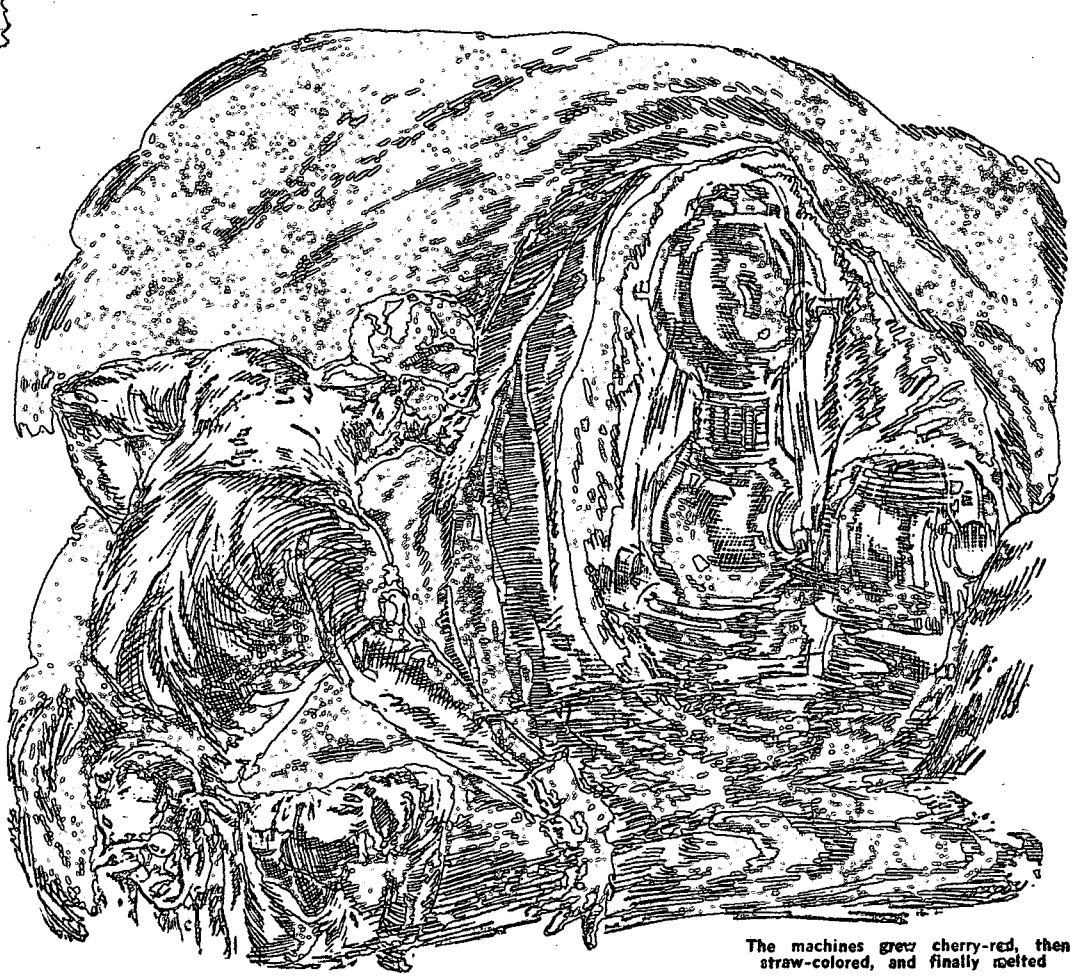

The machines grew cherry-red, then straw-colored, and finally melted

THE SKY WAS FULL OF SHIPS

By THEODORE STURGEON

They tried Gordon Kent for murder—but it was impossible to find those who were really responsible for the curious crime!

SYKES died, and after two years they tracked Gordon Kemp down and brought him back, because he was the only man who knew anything about the death. Kemp had to face a coroner's jury in Switchpath, Arizona, a crossroads just at the edge of the desert, and he wasn't too happy about it, being city-bred and not quite understanding the difference between "hicks" and "folks."

The atmosphere in the courtroom was tense. Had there been great wainscoted walls and a statue of blind Justice, it would have been more impersonal and, for Kemp, easier to take. But this courtroom was a crossroads granger's hall in Switchpath, Arizona.

The presiding coroner was Bert Whelson, who held a corncob pipe instead of a gavel. At their ease around the room were other men, dirt-farmers and prospectors like Whelson. It was like a movie short. It needed only a comedy dance number and somebody playing a jug.

But there was nothing comic about it.

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These hicks were in a position to pile trouble on Kemp, trouble that might very easily wind up in the gas chamber.

The coroner leaned forward. "You got nothin' to be afeard of, son, if your conscience is clear."

"I still ain't talking. I brought the guy in, didn't I? Would I of done that if I'd killed him?"

The coroner stroked his stubble, a soft rasping sound like a rope being pulled over a wooden beam.

"We don't know about that, Kemp. *Hmm.* Why can't you get it through your head that nobody's accusing you of anything? You're jest a feller knows something about the death of this here Alessandro Sykes. This court'd like to know exactly what happened."

He hesitated, shuffled.

"Sit down, son," said the coroner.

That did it. He slumped into the straight chair that one of the men pushed up for him, and told this story.

* * *

I guess I better go right back to the beginning, the first time I ever saw this here Sykes.

I was working in my shop one afternoon when he walked in. He watched what I was doing and spoke up.

"You Gordon Kemp?"

I said yes and looked him over. He was a scrawny feller, prob'ly sixty years old and wound up real tight. He talked fast, smoked fast, moved fast, as if there wasn't time for nothin', but he had to get on to somethin' else. I asked him what he wanted.

"You the man had that article in the magazine about the concentrated atomic torch?" he said.

"Yeah," I told him. "Only that guy from the magazine, he used an awful lot of loose talk. Says my torch was three hundred years ahead of its time." Actually it was something I stumbled on by accident, more or less. The ordinary atomic hydrogen torch—plenty hot.

I figured out a ring-shaped electro-magnet set just in front of the jet, to concentrate it. It repelled the hydrogen particles and concentrated them. It'll cut anything—anything. And since it got patented, you'd be surprised at the calls I got. You got no idea how many people want to cut into bank vaults an' the side doors of hock shops. Well, about Sykes. . . .

I told him this magazine article went a little too far, but I did have quite a gadget. I give him a demonstration or two, and he seemed satisfied. Finally I told him I was wasting my time unless he had a proposition.

He's lookin' real happy about this torch of mine, an' he nods.

"Sure. Only you'll have to take a couple of weeks off. Go out West. Arizona. Cut a way into a cave there."

"Cave, huh?" I said. "Is it legal?" I didn't want no trouble.

"Sure it's legal," he tells me.

"How much?"

He says he hates to argue.

"If you'll get me into that place—and you can satisfy yourself as to whether it's legal—I'll give you five thousand dollars," he says.

NOW, five thousand berries cuts a lot of ice for me. Especially for only two weeks' work. And besides, I liked the old guy's looks. He was queer as a nine-dollar bill, mind you, and had a funny way of carryin' on, but I could see he was worth the kind of money he talked.

He looked like he really needed help, too. Aw, maybe I'm just a boy scout at heart. As I say, I liked him, money or no money, and chances are I'd have helped him out for free.

He came to see me a couple more times and we sweated out the details. It wound up with him and me on the train and my torch and the other gear in the baggage car up front. Maybe some of you remember the day we arrived here. He seemed to know a lot of people here. Mm? I thought so. He told me how many years he had been coming out to Switchpath.

He told me lots of things. He was one of the talkin'est old geezers I ever did see. I understood about one ninth of what he said. He was lonely, I guess. I was the first man he ever called in to help him with his work, and he spilled the overflow of years of workin' by himself.

About this Switchpath proposition, he told me that when he was just a punk out of college, he was a archyologist roamin' around the desert lookin' for old Indian stuff, vases and arrowheads and such stuff. And he run across this here room in the rock, at the bottom of a deep cleft.

He got all excited when he told me about this part of it. Went on a mile a minute about plasticine ages and messy zorics and pally o' lithographs or something. I called him down to earth and he explained to me that this

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room was down in rock that was very old—a couple of hundred thousand years, or maybe a half million.

He said that rock had been there either before mankind had a start here on earth, or maybe about the same time as the missing link. Me, I don't care about dead people or dead people's great grandfather's, but Sykes was all enthusiastic.

Anyhow, it seems that this cave had been opened by some sort of an earthquake or something, and the stuff in it must have been there all that time. What got him excited was that the stuff was machinery of some kind and must have been put there 'way *before there was any human beings on earth at all!*

That seemed silly to me. I wanted to know what kind of machinery.

"Well," he says, "I thought at first that it was some sort of a radio transmitter. Get this," he says. "Here is a machine with an antenna on top of it, just like a micro-wave job. And beside it is another machine.

"This second machine is shaped like a dumbbell standing on one end. The top of it is a sort of covered hopper, and at the waist of the machine is a arrangement of solenoids made out of some alloy that was never seen before on this earth.

"There's gearing between this machine and the other, the transmitter. I have figured out what this dumb-bell thing is. It's a recorder."

I want to know what is it recording. He lays one finger on the side of his nose and winks at me.

"Thought," he says. "Raw thought. But that isn't all. Earthquakes, continental shifts, weather cycles, lots more stuff. It integrates all these things with thought."

I want to know how he knows all this. That was when he told me that he had been with this thing for the better part of the last thirty years. He'd figured it out all by himself. He was real touchy about that part of it.

Then I began to realize what was the matter with the poor old guy. He really figured he had something big here and he wanted to find out about it. But it seems he was a ugly kid and a shy man, and he wanted to make the big splash all by himself. It wouldn't do for him just to be known as the man who discovered this thing.

"Any dolt could have stumbled across it," he'd say. He wanted to find out everything there was about this thing before he let a soul know about it. "Greater than the Rosetta Stone," he used to say. "Greater than the nuclear hypotheses." Oh, he was a great one for slinging the five-dollar words.

"And it will be Sykes who gave this to the world," he would say. "Sykes will give it to humanity, complete and provable, and history will be reckoned from the day I speak."

Oh, he was wacky, all right. I didn't mind, though. He was harmless, and a nicer little character you'd never want to meet.

FUNNY guy, that Sykes. What kind of a life he led I can only imagine. He had dough—inherited an income or something, so he didn't have the problems that bother most of the rest of us. He would spend days in that cavern, staring at the machines. He didn't want to touch them. He only wanted to find out what they were doing there. One of them was running.

The big machine, the dumbbell-shaped one, was running. It didn't make no noise. Both machines had a little disk set into the side. It was half red, half black. On the big machine, the one he called the recorder, this here disk was turning. Not fast, but you could see it was moving. Sykes was all excited about that.

On the way out here, on the train, he spouted a lot of stuff. I don't know why. Maybe he thought I was too dumb to ever tell anybody about it. If that's what he thought, he had the right idea. I'm just a grease-monkey who happened to have a bright idea. Anyway, he showed me something he had taken from the cave.

It was a piece of wire about six feet long. But wire like I have never seen before or since. It was about 35 gauge—like a hair. And crooked. Crimped, I mean. Sykes said it was magnetized too. It bent easy enough, but it wouldn't kink at all, and you couldn't put a tight bend in it. I imagine it'd dent a pair of pliers.

He asked me if I thought I could break it. I tried and got a gash in my lunch-hook for my trouble. So help me, it wouldn't break, and it wouldn't cut, and you couldn't get any of those crimps out of it. I don't mean you'd pull the wire and it would snap back. No. You couldn't pull it straight at all.

Sykes told me on the train that it had taken him eight months to cut that piece loose. It was more than just tough. It fused with itself. The first four times he managed

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to cut it through, he couldn't get the ends apart fast enough to keep them from fusing together again.

He finally had to clamp a pair of steel blocks around the wire, wait for enough wire to feed through to give him some slack and then put about twelve tons on some shears to cut through the wire. Forged iridium steel, those cutters were, and that wire left a heck of a hole in them.

But the wire parted. He had a big helical spring hauling the wire tight, so that the instant it parted it was snapped out of the way. It had to be cut twice to get the one piece out, and when he put the ends together they fused. I mean, both on the piece he took out and the two free ends in the machine—not a mark, not a bulge.

Well, you all remember when we arrived here with all that equipment, and how we hired a car and went off into the desert. All the while the old man was happy as a kid.

"Kemp, my boy," he says, "I got it decoded. I can read that tape. Do you realize what that means? Every bit of human history—I can get it in detail. Every single thing that ever happened to this earth or the people in it.

"You have no idea in what detail that tape records," he says. "Want to know who put the bee on Alexander the Great? Want to know what the name of Pericles' girl friend really was? I have it all here. What about these Indian and old Greek legends about a lost continent? What about old Fort's fireballs? Who was the man in the iron mask? I have it, son, I have it."

That was what went on all the way out there, to that place in the dry gulch where the cave was.

You wouldn't believe what a place that was to get to. How that old guy ever had the energy to keep going back to it I'll never know. We had to stop the car about twenty miles from here and hoof it.

The country out there is all tore up. If I hadn't already seen the color of his money I'd 'a said the heck with it. Sand an heat an big rocks an' more places to fall into and break your silly neck—*Lord!*

Me with a pack on my back too, the torch, the gas and a power supply and all. We got to this cleft, see, and he outs with a length of rope and makes it fast to a stone column that's eroded nearby. He has a slip-snaffle on it. He lowers himself into the gulch and I drop the gear down after him, and then down I go.

Brother, it's dark in there. We go uphill about a hundred and fifty yards, and then Sykes pulls up in front of a facing. By the light of his flash I can see the remains of a flock of campfires he's made there over the years.

"There it is," he says. "It's all yours, Kemp. If that three-hundred-years-in-the-future torch of yours is any good—prove it."

I unlimbered my stuff and got to work, and believe me it was hard, slow goin'. But I got through. It took nine hours before I had a hole fit for us to crawl through, and another hour for it to cool enough so's we could use it.

ALL that time the old man talked. It was mostly bragging about the job he'd done decoding the wire he had. It was mostly Greek to me.

"I have a record here," he says, swishin' his hunk of wire around, "of a phase of the industrial revolution in Central Europe that will have the historians gnashing their teeth. But have I said anything? Not me. Not Sykes!

"I'll have the history of mankind written in such detail, with such authority, that the name of Sykes will go into the language as a synonym for the miraculously accurate." I remember that because he said it so much. He said it like it tasted good.

I remember once I asked him why it was we had to bother cutting in. Where was the hole he had used?

"That, my boy," he says, "is an unforseen quality of the machines. For some reason they closed themselves up. In a way I'm glad they did. I was unable to get back in and I was forced to concentrate on my sample. If it hadn't been for that, I doubt that I would ever had cracked the code."

So I asked him what about all this—what were the machines and who left them there and what for? All this while I was cutting away at that rock facing. And, man! I never seen rock like that. If it *was* rock, which, now, I doubt.

It come off in flakes, in front of my torch. *My* torch, that'll cut anything. Do you know that in those nine hours I only got through about seven and a half inches of that stuff? And my torch'll walk into laminated bank vaults like the door was open.

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When I asked him he shut up for a long time, but I guess he wanted to talk. He sure was enthusiastic. And besides, he figured I was too dumb to savvy what he was talking about. As I said before, he was right there. So he run off about it, and this is about how it went—

"Who left these machines here or how they operate, we may never know. It would be interesting to find out, but the important thing is to get the records and decode them all."

It had taken him awhile to recognize that machine as a recorder. The tipoff was that it was running and the other one, the transmitter, was not.

"He thought at first that maybe the transmitter was busted, but after a year or two of examining the machines without touching them he began to realize that there was a gear-train waiting by the tape where it fed through the gismo that crimped it.

"This gear train was fixed to start the transmitter, see? But it was keyed to a certain crimp in the tape. In other words, when something happened somewhere on earth that was just the right thing, the crimper would record it and the transmitter would get keyed off.

Sykes studied that setup for years before he figured the particular squiggle in that wire that would start that transmitter to sending. Where was it sending to? Why? Sure, he thought about that. But that didn't matter to him.

What was supposed to happen when the tape ran out? Who or what would come and look at it when it was all done? You know, he didn't care. He just wanted to read that tape, is all. Seems there's a lot of guys write history books and stuff. And he wanted to call them liars. He wanted to tell them the way it really was. Can you imagine?

So there I am, cutting away with my super-torch on what seems to be a solid wall made out of some stuff that has no right to be so tough. I can still see it.

So dark, and me with black goggles on, and the doc with his back to me so's he won't wreck his eyes, spoutin' along about history and the first unbiased account of it. And how he was going to thrust it on the world and just kill all those guys with all those theories.

I remember quitting once for a breather and letting the mercury cells juice up a bit while I had a smoke. Just to make talk I ask Sykes when does he think that transmitter is going to go to work.

"Oh," he says. "It already did. It's finished. That's how I knew that my figuring was right. That tape has a certain rate through the machine. It's in millimeters per month. I have the figure. It wouldn't matter to you. But something happened a while ago that made it possible to check. July sixteenth, nineteen hundred and forty-five, to be exact."

"You don't tell me," I says.

"Oh," he says, real pleased, "but I do! That day something happened which put a wiggle in the wire there—the thing I was looking for all along. It was the crimp that triggered the transmitter. I happened to be in the cave at the time.

"The transmitter started up and the little disk spun around like mad. Then it stopped. I looked in the papers the next week to see what it was. Nothing I could find. It wasn't until the following August that I found out."

I suddenly caught wise.

"Oh—the atom bomb! You mean that rig was set up to send something as soon as an atomic explosion kicked off somewhere on earth!"

HE NODDED his head. By the glare of the red-hot rock he looked like a skinny old owl.

"That's right. That's why we've got to get in there in a hurry. It was after the second Bikini blast that the cave got sealed up. I don't know if that transmission is ever going to get picked up.

"I don't know if anything is going to happen if it is picked up. I do know that I have the wire decoded and I mean to get those records before anybody else does."

If that wall had been any thicker I never would've gotten through. When I got my circle cut and the cut-out piece dropped inside, my rig was about at its last gasp. So was Sykes. For the last two hours he'd been hoppin' up an' down with impatience.

"Thirty years' work," he kept saying. "I've waited for this for thirty years and I won't be stopped now. Hurry up! Hurry up!"

And when we had to wait for the opening to cool I thought he'd go wild. I guess that's what built him up to his big breakdown. He sure was keyed up.

Well, at last we crawled into the place. He'd talked so much about it that I almost felt I was comin' back to something instead of seeing it for the first time.

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There was the machines, the big one about seven feet tall, dumb-bell shaped, and the little one sort of a rounded cube with a bunch of macaroni on top that was this antenna he was talking about.

We lit a pressure lantern that flooded the place with light—it was small, with a floor about nine by nine—and he jumped over to the machines.

He scrabbles around and hauls out some wire. Then he stops and stands there looking stupid at me.

"What's the matter, Doc?" I say. I called him Doc.

He gulps and swallows.

"The reel's empty. It's empty! There's only eight inches of wire here. Only—" and that was when he fainted.

I jumped up right away and shook him and shoved him around a little until his eyes started to blink. He sits up and shakes himself.

"*Refilled,*" he says. He is real hoarse. "Kemp! They've been here!"

I began to get the idea. The lower chamber is empty. The upper one is full. The whole set-up is arranged to run off a new recording. And where is Sykes' thirty years' work?

He starts to laugh. I look at him. I can't take that. The place is too small for all that noise. I never heard anybody laugh like that. Like short screams, one after the other, fast. He laughs and laughs.

I carry him out. I put him down outside and go back in for my gear. I can hear him laughing out there and that busted-up voice of his echoing in the gulch. I get everything onto the back pack and go to put out the pressure lantern when I hear a little click.

It's that transmitter. The little red and black disk is turning around on it. I just stand there watching it. It only runs for three or four minutes. And then it begins to get hot in there.

I got scared. I ducked out of the hole and picked up Sykes. He didn't weigh much. I looked back in the hole. The cave was lit up. Red. The machines were cherry-red, straw-color, white, just that quick. They melted. I saw it. I ran.

I don't hardly remember getting to the rope and tying Sykes on and climbing up and hauling him up after me. He was quiet then, but conscious. I carried him away until the light from the gulch stopped me. I turned around to watch.

I could see a ways down into the gulch. It was fillin' up with lava. It was lightin' up the whole desert. And I never felt such heat. I ran again.

I got to the car and dumped Sykes in. He shifted around on the seat some. I asked him how he felt. He didn't answer that but mumbled a lot of stuff.

Something like this:

"They knew we'd reached the atomic age. They wanted to be told when. The transmitter did just that. They came and took the recordings and refilled the machine.

"They sealed off the room with something they thought only controlled atomic power could break into. This time the transmitter was triggered to human beings in that room. Your torch did it, Kemp—that three-hundred-years-in-the-future torch! They think we have atomic power! They'll come back!"

"Who, doc? Who?" I says.

"I don't know," he mumbles. "There'd be only one reason why someone—some creature—would want to know a thing like that. And that's so they could stop us."

SO I laughed at him. I got in and started the car and laughed at him.

"Doc," I said, "we ain't goin' to be stopped now. Like the papers say, we're in the atomic age if it kills us. But we're in for keeps. Why, humanity would have to be killed off before it'd get out of this atomic age."

"I know that, Kemp—I know—that's what I mean! What have we done? What have we done?"

After that he's quiet a while and when I look at him again I see he's dead. So I brought him in. In the excitement I faded. It just didn't look good to me. I knew nobody would listen to a yarn like that.

* * *

There was silence in the courtroom until somebody coughed, and then everyone felt he had to make a sound with his throat or his feet. The coroner held up his hand.

"I kin see what Brother Kemp was worried about. If that story is true I, for one, would think twice about tellin' it."

"He's a liar!" roared a prospector from the benches. "He's a murderin' liar! I have a kid reads that kind of stuff, an' I never did like to see him at it. Believe me, he's a-goin' to cut it out as of right now. I think this Kemp feller needs a hangin!"

(Concluded on page 65)

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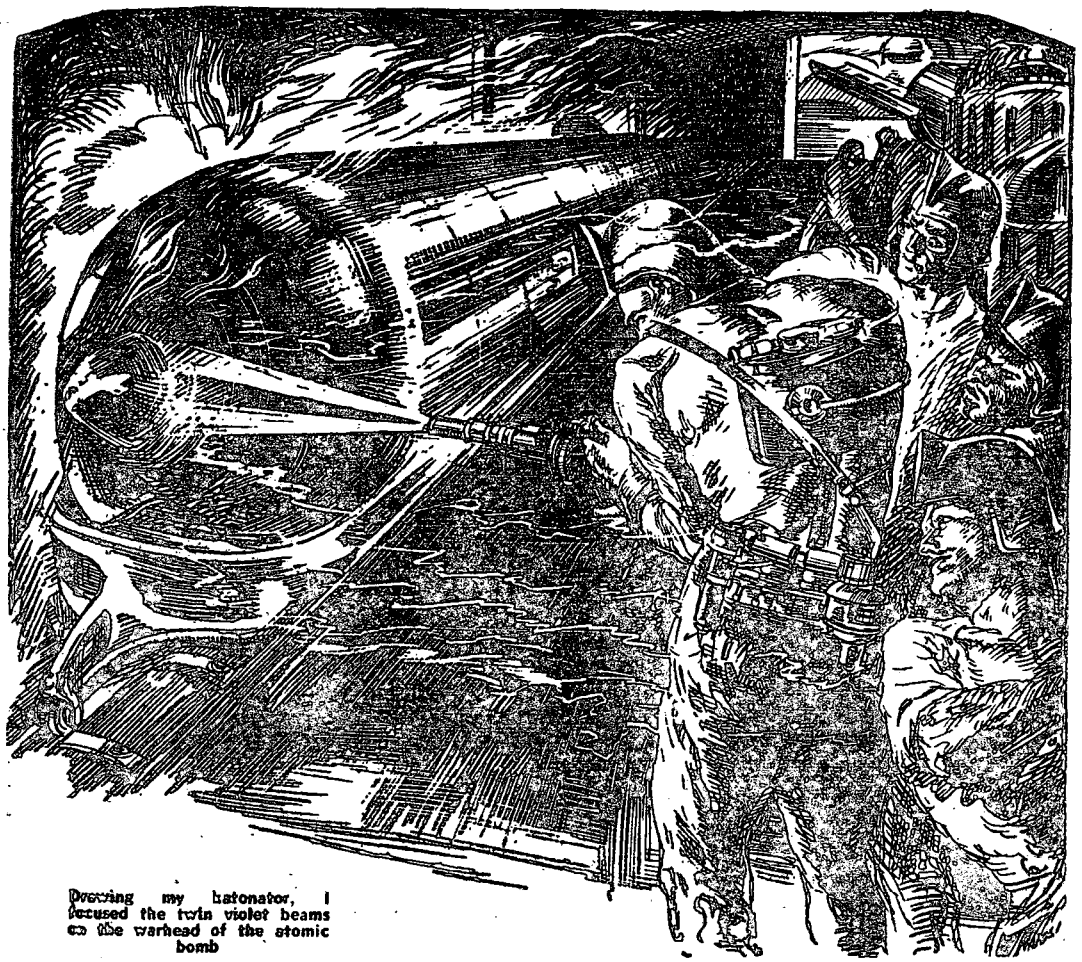

Drawing my batonator, I focused the twin violet beams on the warhead of the atomic bomb

A HITCH IN TIME

By JAMES MacCREIGH

Young Thom Ra travels back to the hideous Venus-Earth war, and ventures peril to win lovely Elren Dri for his mate!

OBVIOUSLY the man was dying, and there was no chance that he ever would be discovered.

I blessed the carelessness that had caused me to set the space-time dials a little off when I began this journey to the distant past. I had come to this barbaric era in the proper time, indeed, but millions of miles removed from it in space. It had been only after an annoying search that I had discovered Earth, jetted toward it in my space-drive suit and had come down out of the skies to land on this tiny, deserted island in the middle of an empty sea.

But it was incredible luck that had brought me there. For I had found exactly what I needed—a man who would give me information, clothing and an identity—and then die, and obliterate the record of my interference with the course of events!

I, Thom Ra, walked toward him. Feeble though he was, he opened his eyes and stared

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at me.

"Thank Heaven!" he whispered, in the thick, hideous language of that era. "I couldn't have lasted much longer if you hadn't found me." He fell back and smiled at me with heartfelt gratitude, and for a moment I felt a wild, fleeting impulse to help him, to save his life. But of course, I dared not interfere. For that would change the shape of the future, and that meant destruction for me. . . .

When I blasted off from the island, a little later, he was dead, and I was wearing his uniform—and his name.

He gave me information before he died, and I had no trouble locating the spot I wanted. I waited till dark before landing a few hundred yards from the war-dome. Then I hid my space-drive suit in a cluster of ancient trees, and walked into the building that housed the most murderous weapon of all time.

The sentry challenged me, of course, but I was ready for him. After a quick look at my stolen credentials he sheathed his ray pistol.

"Pass, sir," he said, and I walked in, no longer as Thom Ra, but identified as a Captain San Requa of the Intelligence Service.

At once I saw the atom-rocket. It was on the other side of the great chamber, nestled in a wheeled cradle, ready to be rolled out to the blast-off point. Hurrying technicians swarmed about it with last-minute checks. I walked over, saluted the officer who was supervising and began to witness events which I had crossed so tremendous a span of years to observe.

The atom-rocket was a long, silvery torpedo, a cluster of tubes at the rear, a snub-nosed warhead at the front. A panel in the side of it was open, and technicians were setting dials according to the figures read off by a white-haired old officer with the insignia of a general on his collar.

I LISTENED in awe and reverence, straining to note and remember everything that occurred. To think that I was actually present at the climactic moment of the legendary War of Annihilation! It was the most thrilling moment of my life. Almost I forgot to curse Master Lys and his duplicity as I watched.

Almost—but not quite. For the thing was too fresh in my mind, and I was aware that I was still in danger.

It had begun with a routine notice that my preparatory work had been approved, and that I was authorized to enter a theme in ortho-history for my final Citizenship Ratings. The theme, I saw with a sinking heart, was the War of Annihilation.

I had hurried to Master Lys, my instructor, sure that there was an error.

"Master, you give me an impossible task," I had said. "The theme regulations are that I must make a 'real and complete contribution to human knowledge.' But how can I? We have so pitifully few records of the War of Annihilation—all of them have been studied, and analyzed, and worked over for thousands of years. There is no way for me to add to what has been written already!"

He cackled at me in his insufferable Tri-Alpha way.

"There is a way," he mumbled, peeping at me out of his rheumy old eyes.

It took me a moment to realize what he meant.

"The time-belts!" And Master Lys nodded.

Well, I argued with him, of course. The time-belts were too dangerous; not one time-traveler in ten returned from the past, even when their projects were as recent as a hundred years ago. And the farther into the past one ventured, the more certain it became that return would be impossible.

For although the mechanism of the time-belts could be trusted and there was no physical menace that the conductor-screens or the katonator-guns could not cope with, there was the ever-present danger of Fan-Shaped Time itself.

It was the First Law of Chronistics: Our era is the product of everything that occurred in the past. Should anything in the past be changed, our age would also be changed. Oh, it would continue to exist, but in a parallel branch of time—and there was no way of passing from one branch to another. And if a traveler into the past should *interfere* in the course of events, he would be bound to the new time-stream his actions created, and the unlucky traveler would never be able to return.

The branches of Fan-Shaped time could never be retraced. The man who interfered with the space-time matrix, displacing even a comma in the great scroll of time, would be cut off from his origin forever.

The danger was too great. I refused to accept the assignment, even though I knew it would mean I could never rise to the status

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of Tri-Alpha citizenship which was otherwise my right.

But then I heard about Elren—lovely, adored Elren Dri—and I could no longer refuse.

For Elren's Mating Indices were posted, and she was a Tri-Alpha herself! Then I understood what had been in Master Lys' mind when he set that impossible task for me. For I knew that the gnarled, worm-eaten old wreck had dared to covet my Elren! Loving me, she could never be his. But with me out of the way he might have a chance.

I accepted the assignment. Master Lys secured a time-belt for me—he was willing enough to help at my execution—and I began my perilous journey through time.

I came back to my surroundings with a start. Something was wrong!

Subconsciously I had been studying the atom-rocket, and now I was jolted out of my reveries as I realized that it did not look as it should have.

THE ortho-history books were clear on one fact: Venus had been destroyed in the War of Annihilation by means of a hydrogen-chain reaction, the most deadly atom blast known. Atoms of hydrogen, under the influence of gamma-particle bombardment, coalesced to form atoms of helium—and all the incalculable power represented by the odd fraction of mass left over was released in the form of free energy.

But the atom-rocket before me seemed to be nothing more than a simple nuclear-fission affair! Where were the photon-exciters? The gamma-ray bombardment equipment?

Of course, even a fission bomb could do a good deal of local damage, as shown in the first atom-bombed cities during the Little Wars of the early Twentieth Century. But, unless our nuclear science was in error, it could not set off a chain reaction of the type that had destroyed the Venusian colonies. Was I in the wrong place?

Alarmed, I shoved my way closer to the rocket, staring at it. It was a crude, primitive affair, of course, and it was hard for me to identify its parts. I examined it with frantic curiosity—and abruptly I found myself in peril!

One of the technicians I had pushed aside was staring at me, eyes filled with suspicion. I caught his gaze and cursed myself for having acted so rashly. Desperately I strove to think of a way to allay his suspicions, but it was too late.

"What are you doing?" the technician demanded. "Who are you?"

I tried to conciliate him.

"Captain San Requa's my name," I said, using the name on the stolen identity papers. "I am—" But I got no farther than that. My accent gave me away.

"He's a spy!" roared the technician. "Help!" And a dozen ray-pistols flashed out of their holsters as the men around us were galvanized into action.

I lost my head. Terrified, I grabbed for the safety belt concealed beneath my stolen tunic, touched the button that controlled my conductor-screen. The screen shimmered into instant life, and not a moment too soon. Rays from the weapons pointed at me flashed from all sides, sparked against the opalescent curtain of the screen and were dissipated.

I was safe—but only for an instant.

For I had made my second great mistake. I was too close to the atom-rocket. My conductor screen grazed the warhead itself!

Its energies surged through the unstable elements in the warhead; a warning bell sprang into clamorous life. The group around me froze in their tracks, mouths open, faces mirroring fright and disbelief—and the frightful power of the strained atoms within the warhead began to grind toward nuclear fission!

There was only one thing to do, and a poor choice it was! But in a moment the warhead would explode, and of me and my mission, and the whole future of Earth, nothing would be left but a puff of fiery vapor.

Quickly I dropped the shield of my conductor screen. Trusting that my luck would hold, and the men around me would be too dazed to fire their weapons again, I drew my katonator, set it at *drain*, focused it on the atomic warhead.

The twin violet beams sprang out and impinged on the silvery metal, pierced it and sucked the heart from the seething mass of erupting matter within. Blinding energies were drawn from those toppling atomic structures, surging through the carrier-beam of the katonator into the photon-pack cartridges at my waist. I had an instant's fear as I wondered if the storage pack would hold all the mighty energies of the warhead, far greater than the maximum load for which it was designed.

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But lightnings of static electricity played about my head, dissipating brilliantly but harmlessly into the air, and in an instant the danger was over. The bursting energies of the warhead had been drawn out, and the mass of matter inside it was inert.

Before me lay the atom-rocket, harmless, dead.

I had destroyed Earth's most potent weapon!

I GIVE those ancients credit for bravery. Dangerous though I must have seemed, they closed in on me without firing their weapons. Meekly I raised my arms over my head.

The white-haired general blazed hatred at me from his pale eyes.

"Who are you?" he demanded.

I shrugged. Carefully I phrased my words in their outlandish tongue.

"I am a—a visitor from the future," I said. "I regret the accident that just happened more than I can say."

"Regret it?" he blazed. "Hah! You'll regret it twice as much when you face the firing squad!"

I spread my hands helplessly. In truth, death had no terrors for me now. A firing squad would seem almost a blessing—for I had destroyed the bomb that would have blasted Venus. Whatever happened now, the future before me was changed—and in a changed future I had no place, and my Elren would not exist!

"Take him out and shoot him," the general cried.

I turned to go to death, almost eagerly. In my heart I whispered:

"Elren! Elren, my lost love!"

The technician who had unmasked me interfered.

"Wait!" he begged. "Let me question him, sir. Perhaps he's telling the truth."

The general glowered. "What's the difference? He's wrecked the bomb!" But he hesitated and finally said, "All right. Question him. The harm's done anyhow."

Sunk in despair I scarcely heard the other officer's sharp queries, but he was hesitant and I told him whence I had come, and why. He looked at me incredulously.

"But the bomb?" he demanded. "What did you do to it?"

I patted the photon-pack cartridges strung along my belt. "I had to drain it," I said. "It was about to explode—"

"Drain it? How?"

"With the katonator." I explained to him how the energies of the exploding atoms were drawn off through the katonator-beams and trapped in the photon-pack.

He stared at the tiny power cells, eyes wide but showing a sudden glint of hope.

"Can you take that energy out again and send it into another object?"

"You mean to energize the atom-bomb again?" I said. "No, of course not."

He was shaking his head. "I mean something else," he said. "Can you send them across fifty million miles of space?"

I stared at him, fascinated and afraid.

"I dare not interfere," I whispered.

"But, you *have* interfered," he yelled. "You've wrecked our chance to win this war. You've got to help us!"

I stepped back, bewildered. What he said was true enough. Yet all my training, all the warnings of Elren and Master Lys, said over and over: You must not interfere!

Yet I had interfered already; I had started a new time-sequence by destroying Earth's chance to wipe out Venus. If I could neutralize that act by helping them now, perhaps there would be a chance.

"I will show you how to use the Katonator," I said weakly.

Silently I adjusted it, slipped the belt off and handed it to him. He led me outside to where stars blazed in a black night. He looked upward hesitantly, pointed to a brilliant blue planet.

"Is that it?" he asked one of his companions. The man nodded. Carefully he took aim, pressed the trigger as I had showed him.

Lightnings roared again! The twin violet beams leaped from the muzzle of the weapon, howled up into the heavens. In a fraction of a second the photon-pack was drained and the pyrotechnic display died away. All was silent.

One of the officers raced back into the building, pounded the keys of a calculator. He returned almost at once.

"At this distance it will take just under nine minutes for light to make the round trip," he said.

The officer who had fired the katonator whirled to confront me.

"Suppose I missed?" he cried in sudden alarm. "It is so far—a fraction of a second of arc would make the beam miss entirely."

I shook my head. "The beam fans out,"

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I explained. "And a planet has mass and the photons are attracted by gravity. Even if they should miss, the attraction of the planet would draw them into it."

HE NODDED and was silent. Silence cloaked us all—a hundred ancients and myself, all staring up into a mysterious night.

Nine minutes passed as slowly as nine terrible years. But by and by the hands of my chronometer completed their revolutions.

Suddenly we saw the katonator beams strike.

Above us a new sun blazed forth, kindling like the striking of a cosmic match. Night fled around us, and day came flaring up into noonday brilliance, and beyond. Heat poured down upon us, brilliant rays of sunlight more intense than I had ever seen. The dome behind me sparkled and glistened in the incredible radiations from the stricken planet millions of miles away, and for a moment I could almost feel the fierce actinic waves of ultra-violet, cosmics and a thousand other super-spectral radiations.

Then the peak was reached, and the light began to fade as all the hydrogen was transmuted and consumed. In a moment the flare of energies was gone, and the pale blue planet had become a glowing orange coal.

We had seen a billion persons dying in a planetary suttee.

The vastness of the dead stunned me. I found that I was sobbing, almost weeping as I felt myself stained with a cosmic guilt.

The officer who had destroyed a billion lives glanced at me in full understanding of what he had done. He placed a hand on my shoulder, strangely comforting.

"It couldn't be helped," he said in a voice that surged with emotion.

I nodded bleakly. It couldn't be helped. "It was for the sake of Earth," I said, blindly seeking justification. "Earth was destined to win, in my time-sequence, and I had interfered—I had to correct the consequences of my blunder—".

I stopped. Wild astonishment burst through the tragic mask on the face of the officer. He drew back his arm as though he had found himself embracing an adder.

"What's the matter?" I asked in astonishment.

He stared at me with dawning comprehension—and pity. "Say that again!" he whispered.

"Why—I said I had to correct my mistake. I had interfered, and the time-traveler who interferes maroons himself hopelessly. I had destroyed your weapon against Venus—yet Venus had to be obliterated, or else I had no chance of return. I was lost—and now, perhaps, I may have a chance to get back."

He shook his head. There was compassion in his voice. "No, you have no chance," he said, and hesitated while I tried to take in his meaning. "You see, this is Venus." He waved at the glowing cinder in the sky. "*That* was Earth up there."

THE SKY WAS FULL OF SHIPS

(Concluded from page 60)

"Now, Jed!" bellowed the coroner. "If we kill off this man we do it legal, hear?" The sudden hubbub quieted, and the coroner turned to the prisoner.

"Listen here, Kemp—somethin' jest occurred to me. How long was it from the time of the first atom blast until the time that room got sealed up?"

"I dunno. About two years. Little over. Why?"

"An' how long since that night you been talking about, when Sykes died?"

"Or was murdered," growled the prospector.

"Shut up, Jed. Well, Kemp?"

"About eighteen mon— No. Nearer two years."

"Well, then," said the coroner, spreading his hands. "If there was anything in your story, or in that goofy idea of the dead man's about someone comin' to kill us off—well, ain't it about time they did?"

There were guffaws, and the end of the grange hall disappeared in a burst of flame. Yelling, cursing, some screaming, they pushed and fought their way out into the moonlit road.

The sky was full of ships.

o

Next Issue: Complete Novelets by WILLIAM FITZGERALD, GEORGE O. SMITH and HENRY KUTTNER — plus many other stories!

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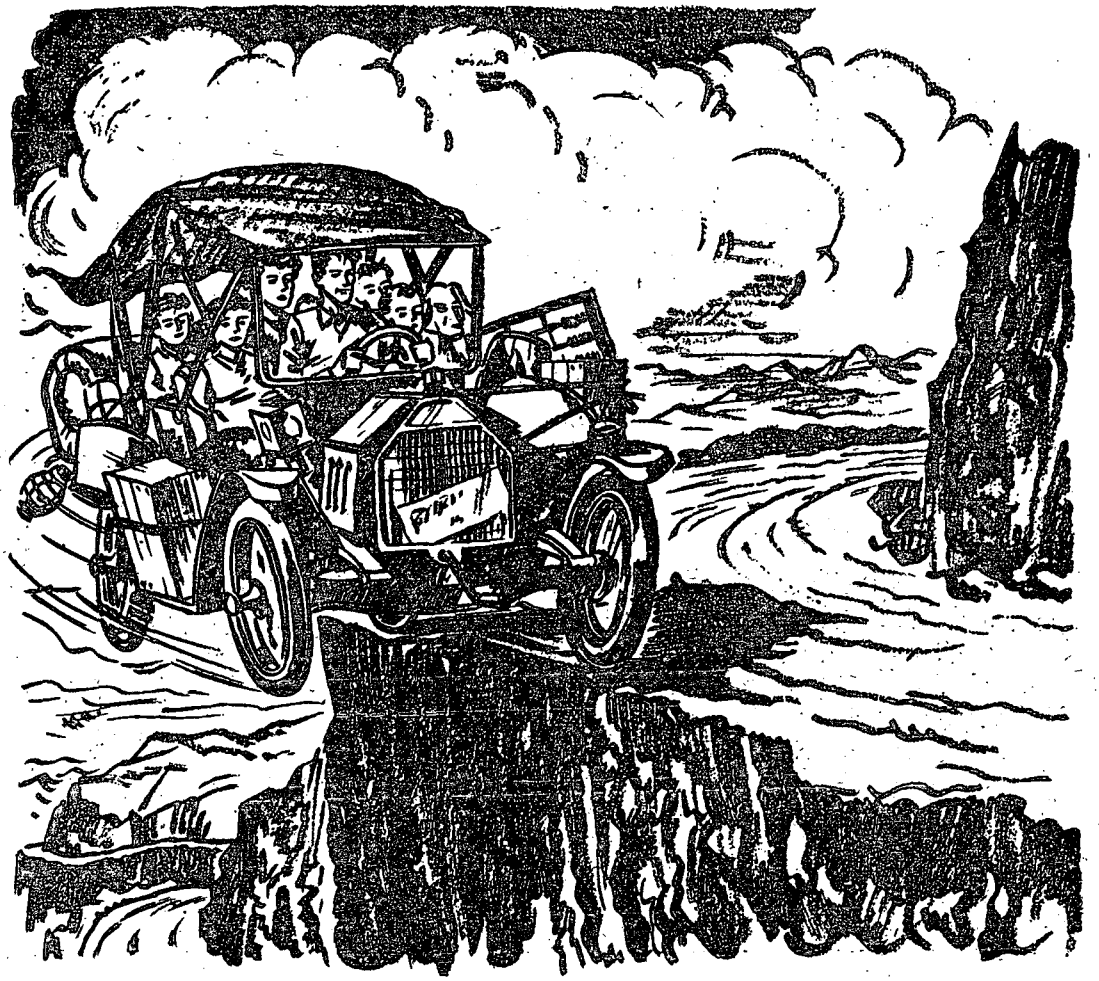

With bulging eyes the truck driver saw the rattletrap vehicle swerve out over

A Bud Gregory Novelet

THE NAMELESS

CHAPTER I

Jalopy With Wings

BUD GREGORY was something there isn't any word for. He bet on a dirt-track automobile race in the State of Colorado, and won twelve dollars. Simultaneously, a certain European Power made a very polite apology to the Icelandic Government for the falling of a rocket-projectile near Reykjavik. In so doing, it advertised publicly that it had long-range guided missiles capable of flights of over two thousand miles.

Next day, Bud Gregory bet on a second dirt-track race and won six dollars more. At very nearly the same instant, *Izvestia* published a bellicose article which practically called for war on the United States—UNO or no UNO—and a middle European nation

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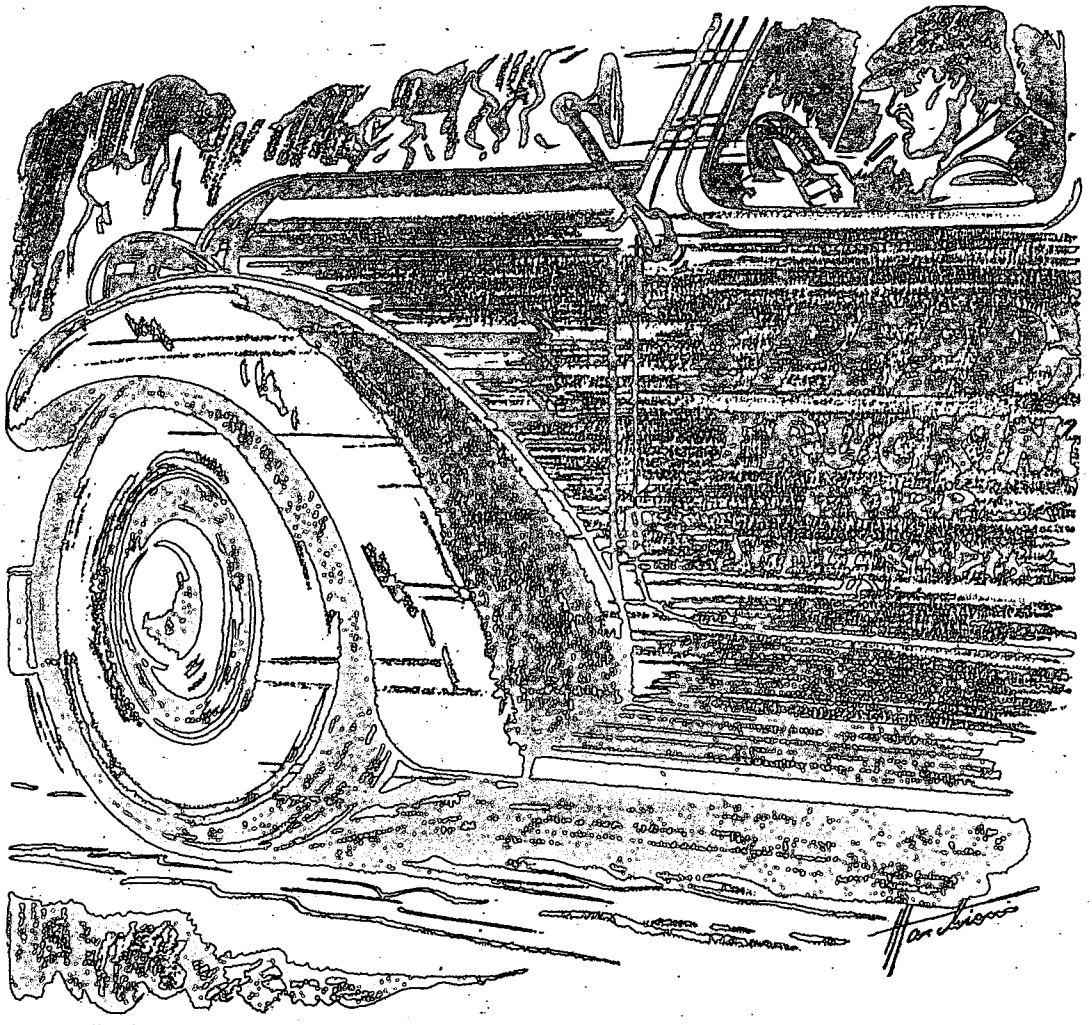

space, until only its inner wheels were on the road

SOMETHING

By
WILLIAM FITZGERALD

offered a calculated, uncalled-for insult to its United States ambassador. The day after, Bud Gregory sat in the bar of a motor-tourist camp and drank beer contentedly all day long.

Two days later still, on a mountain highway in the Rockies, the driver of a sixteen-wheel Diesel truck came booming to a sharp curve which had a cliff on one side and a four-hundred-foot drop on the other.

The truck thundered around that curve—and ran slap into a rattletrap car with a flapping fabric top and an incredible load of children and household goods. Ran slap into it, that is, to the extent that a collision was inevitable. The jalopy was on the wrong side of the road.

The truck could not turn out, nor the jalopy turn in, in time. So the truck-driver froze, and saw the rattletrap vehicle swerve

Goes Out for the Wizard of the Great Smokies!

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out still farther on the wrong side of the road—ride out until only its inner wheels were on the highway and its outer wheels spun merrily over vacancy.

It should have toppled instantly and horribly, only it didn't. It rode exactly as if there were an invisible highway surface over emptiness. The Diesel driver saw it swerve placidly back into the road behind him, and go on. And he braked his monster truck to a stop and had a perfectly good fit of the shakes. He made up his mind to take a week off to be spent in rest and quiet. He did.

On that day, it was said in Washington that a grave international crisis threatened, and eminent statesmen went about in spectacular silence, refusing to speak for publication but privately tipping off their favorite newspapermen to monstrous events due to occur.

ON YET another day Bud Gregory arrived at yet another place where further dirt-track automobile racing was in progress, and attempted negotiations with a dejected driver who had not been in the money for weeks. The driver laughed at him, bitterly, and Bud Gregory was indignant. He bet on the races and lost two dollars.

On the same day, four satellite nations of a certain European Power revealed that for several months they had been running atomic piles, and now had a sufficient stock of atomic bombs for their own defense. The rest of the United Nations erupted into frenzied protests—which cut off short when they realized it was too late to object.

And after three more days, Bud Gregory drove into Los Angeles in a car which was in the last stages of dilapidation. It contained himself, his wife, and an indeterminate number of tow-haired children. Also it contained two hound-dogs, several mattresses, many packages, innumerable parcels, had strapped-on cots fastened to its running-boards, and was further festooned with gunnysacks containing stocks of vegetables and canned foods.

It was flagged down by a motorcycle cop beside the highway. But Bud Gregory did not stop. The decrepit car plunged ahead. The motorcycle cop mounted his steed and pursued. The decrepit car moved more swiftly. It looked as if an asthmatic twenty miles an hour would be its limit. But it hit forty within seconds of the cop's attempt to halt it. It was making eighty when it ran into Los Angeles traffic. And still it did not stop.

The motorcycle cop sweated blood, envisioning catastrophe. He gave his motorbike everything it would take, blaring his siren continuously and shrilling his whistle when he passed policemen on foot in the hope that they would telephone on ahead.

The next fifteen minutes gave a dozen members of the traffic police—who joined in the chase—gray hairs and a tendency to babble quietly to themselves. The dilapidated car left all pursuit behind. It ran into traffic in which it should have smashed up fifty times over. It left behind it a stream of crashes and collisions and nerve-racked pedestrians, but it did not even touch another vehicle or a single individual.

The collisions came from other cars swerving frantically to avoid it as it rocketed through Los Angeles' swarming streets. Half the time it rode on the wrong side of the highway, cutting in and out, speeding up with an incredible acceleration, slowing down with completely impossible abruptness, and turning corners at a rate which even those who saw it did not believe.

On Wilshire Boulevard it reached a climax of preposterous performance. It came streaking through traffic at something like ninety-two miles an hour. It left a mounting uproar behind it. And it came to a crossing where a red light had halted everything, came eeling down the wrong side of the street, swerved so that it should have turned somersaults, but observers said that it ran as if its wheels were glued to the ground, and—there in front of it, in the only space by which it could move on—was a monstrously fat woman in the act of crossing the street as the light permitted.

Women fainted on the sidewalk after it was all over. There was no time to faint before. The dilapidated car headed for the fat woman at ninety-eight miles an hour. Then, when it could not possibly stop in time, it began to slow.

Some witnesses said that it stopped in fifteen feet. Certainly it stopped so suddenly that the gunnysacks dangling from its top-supports swung and stood out stiffly before it, and one of them burst and potatoes shot out before the stopped car like bullets. A small one—a cull—smacked the fat woman smartly, in a highly, indecorous manner. She shrieked and leaped, and the rattletrap shot through the space she had vacated.

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IN TWENTY feet it was traveling sixty miles an hour. In forty, it was going better than ninety again, and it went on out of town like a bat out of a belfry. No motorcycle cop came anywhere near it. Not even the two policemen on the farther side of town who took up the chase on a clear highway. One of them pushed his bike—so he claimed—up to a hundred and twenty miles an hour.

The decrepit jalopy, which should have collapsed far below the speed limit, left him behind as if he were standing still, and a tow-headed child poked its head through the flapping back-curtain and stuck out its tongue at him as it went on.

On that same day the Government of the United States received a very blunt note from the European Power whose satellites had revealed their possession of atomic bombs and which had itself sent apology to Iceland for landing a guided missile near Reykjavik.

The note was not an ultimatum in form, of course. But it expressed the desire of the European Power to negotiate with the United States regarding changes in the American form of government, which changes were necessary to make the European Government feel that the United States was sincerely desirous of peace.

In other words, the European Power had decided that democracies were dangerous to it, and amiably offered America the choice of surrendering to a small, fanatical party within its borders, or of facing an atomic war.

And that night Bud Gregory drove into a tin-can-tourist camp and he and his family settled down for a comfortable stay, as soon as he made sure that the dirt-track races nearby were still going on.

CHAPTER II

Miracles Without Work

LIKE everybody else in the United States, Dr. David Murfree of the Bureau of Standards, in Washington, felt rather sick at the prospect of war under any circumstances, and especially under the conditions obtaining. The point was that the United States literally could not make a sneak atomic attack on anybody. Its prospective enemy could. Nobody in America had authority to issue an order for the beginning of war.

In the European Power's government there was one man who could simply nod his head and have guided missiles go keening up into the stratosphere to fall thousands of miles away upon the cities of the United States.

If Congress took his note as it deserved to be taken—as a threat of war—he would nod his head and possibly half of the population in America would be dead within hours. The United States was as well-armed as any other Power in the world, perhaps better-armed.

But the United States could not shoot first. It simply, literally, could not. And in atomic war, the one who shoots first wins. So the situation was that the enemy had made a threat which struck at the very roots of American civilization, and if the United States took measures to meet it, it would be destroyed.

Most of the people who really understood the danger went into hidden panic. There was a sudden quiet movement of well-informed people out of the larger cities. The movement spread. It ceased to be quiet. It became a mass exodus—more or less orderly, to be sure, but a movement of whole populations.

Terror lived in the cities, but not in the open country so the cities became practically abandoned and the European Power watched with sardonic amusement as the greatest nation on earth seemed to go into a blue funk at the very notion of the European Power's displeasure.

Two-thirds of Congress found excuses to leave Washington, which would certainly be bombed in case of war. It was impossible to secure a quorum in the Capital either to enact laws to resist the threat or to yield to it. The government of the United Staes was paralyzed by a mere verbal menace.

But Doctor David Murfree stayed at his post. He kept his head. The menace held, but for nearly a week nothing happened. The State Department replied to the note it had received. It asked the European Power for the agenda of the discussion it proposed and for an outline of the reasons why the European Power feared aggression from the United States. It used all the normal tricks to stall and gain time. Which was exactly in line with the desires of the head of the threatening nation.

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So long as there was a crisis in being, there would be terror and confusion in America. Large numbers of the population would be uprooted, the cities would be nearly or quite deserted, commerce would stop and generally such a state of affairs would exist that —so a European would reason—presently the American public would be willing to accept any possible surrender of principle just to get things going again. It would be willing even to surrender democracy.

There were times when it seemed likely in America, too. Some people stayed on at their posts. Some sent their families to safety and carried on. But very many fled. Still there was a skeleton semblance of city life still going on.

Many factories closed, but some florists stayed in business. Police and newspapers here and there and radio stations and delicatessen stores and a few taxicabs, and generally a small percentage of every sort of activity continued to function. But it was a very small percentage.

Murfree, however, grimly made the most of what was left. He stayed at his desk in the Bureau of Standards and urgently and persistently hounded the moribund clipping-bureaus for newspaper accounts of odd events. That paradoxic activity, he felt, was the only hope that the United States could have to avoid either complete social and economic collapse, or else bombardment by atomic bombs which would reduce its cities to ruins.

He'd been collecting such clippings for months. It was a good deal of a strain on his finances too, because he had only a forty-seven-hundred-dollar Civil Service job, and living in Washintgon is expensive. He paid ten cents for every clipping sent him by four bureaus, which dutifully searched newspaper columns all over the country.

IF SOMEBODY announced an atomic engine, a clipping came to Murfree. If an automobile had a freak accident, he saw the news account. If a souped-up motor made history at an outboard-motor racing meet, or an inventor made extravagant claims for some new device, or there was an explosion without plain cause, or somebody reported having seen something impossible—the last especially—Murfree was sure to be poring over the news account as soon as it reached print.

It was the way by which he hoped eventually to locate Bud Gregory. He'd only seen the man twice* but he knew what Bud Gregory was, and there was no word for it. Musical prodigies are well-known enough. Mathematical marvels extract fourth-power roots correctly by mental arithmetic, and are completely unable to tell how they do it.

But Bud Gregory was something else. He knew intuitively the answer to any problem a physicist could propound, and he hated work. He had run a one-man auto-repair shop in a village in the Great Smoky Mountains, and worked only when he couldn't help it. But when he did work, he casually devised short-cuts—to avoid work—that were breathtaking.

Murfree now owned one gadget Bud Gregory had made. It completely eliminated friction from any mechanical device it was hooked to. Murfree had studied it exhaustively, but he couldn't understand it and couldn't even duplicate it. But Bud Gregory's genius once had brought about results he didn't anticipate.

To get even with someone who'd offended him, Bud had made a certain device and turned it over to his tormenter, who used it otherwise than as Bud expected. Common, ordinary rock became a monstrous atomic pile where it was turned on. Radioactive dust and gases wrought havoc before Murfree found the source and Bud Gregory improvised a way to stop it. And then Bud Gregory, in a panic, had disappeared lest he be held to account for the damage his device had caused.

Now Murfree hoped to locate him by further—and it was to be hoped harmless—results of his combined genius and laziness. He'd vanished in a rattle-trap with his wife and dogs and children. He would unquestionably support himself by roadside automobile repairs. So sooner or later Murfree hoped to receive a newspaper clipping of some preposterous event which he, and only he, would know meant Bud Gregory was at work. But it came to be grim work, waiting, and endlessly hoping.

A second sharp note arrived from the European Power, declaring that there was reason to believe the United States had secretly prepared for war. If the Atlantic carrier fleet remained invisible, it would have to be assumed that the ships had set out

*See THE GREGORY CIRCLE, THRILLING WONDER STORIES, April, 1947.

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on a mission to loose plane-carried atomic bombs on the complaining nation. So the carrier fleet returned to port.

Then a third note arrived. A fleet of long-range U.S. bombers waited at its home base, fueled and armed and ready to take off. Was this fleet ready for a flight across the North Pole to make an atomic attack? If not, it would be disarmed.

Then another note still. The atomic-bomb plants of the United States still functioned, turning out atomic explosives. Against whom did the United States prepare, if not against the complaining nation?

Congress could not be convened because too many of its members were in a funk. The United States could not make war without Congressional action unless attacked. So it could not make war until attacked, and an attack with atomic bombs by two-thousand-mile guided missiles—

The country almost disintegrated, so far as the larger cities were concerned. The little towns, though, which were not important enough to be bombed, throve in their impunity. Farm-houses and boarding-houses accustomed to take in summer boarders fairly bulged at their seams. Beaches and camps and cottage towns, trailer-camps and mountain hotels and lakeside resorts, all hummed and boomed with refugees from the cities, while the cities themselves were like cities of death.

Whole industries shut down for lack of workers and executives. There was privation and unemployment because death was in the air. There had not been so much as a firecracker set off, but the United States faltered in its stride and its life came almost to a standstill because of the imminence of atomic war.

BUT the owners of roadside taverns grew rich, and county fairs flourished, and roller-coaster proprietors bought new diamonds, and—dirt-track auto races in small towns were thronged with patrons. And Bud Gregory followed the dirt-track races. He had a trick that brought in plenty of money, nowadays. Plenty! Ten, fifteen, sometimes even twenty dollars in a single day, and without his doing a tap of work. He sat in blissful somnolence beside his antique car. His children brought him beer. Now and again he sent one of them to make a small bet.

Bud Gregory, who was the only hope of the survival of the American way of life, loafed blissfully, dozed contentedly, idled magnificently, and drank beer comfortably. He did not lift a finger unnecessarily from one day's end to another.

It was purest accident that, as civilization toppled in America, newspaper clippings reached Murfree which told him where Bud Gregory was.

He got a plane-ride to California by a combination of luck and desperation. On the way West he read and re-read the three newspaper clippings on which he believed the fate of the United States depended. One was an account of the impossible ride of an ancient jalopy through Los Angeles traffic at ninety miles an hour. The reporter who wrote it didn't believe it himself.

One was a digest of tall tales current among motor tourists, of a mysterious mechanic roaming the highways and performing miraculous repairs for ridiculously low prices. It was a feature-story, suggesting that motor-tramps were devising a legendary figure who would some day rival Paul Bunyan.

But the third was the important one. That told of a dirt-track automobile race in which the winner made absolutely unparalleled time, averaging three laps to the field's two, and achieving turns that even those who saw them didn't believe.

Murfee knew better than the eyewitnesses what had happened in all three cases. Bud Gregory had made his way across the continent in a car which should have fallen apart in the first ten miles. He was using that outragious gift of his to keep from working. And no more than four days before Murfree boarded a plane in Washington, he'd been somewhere near the dirt race-track at Palo Bajo, in California.

Murfree made for that place as fast as wangled passage on an Army plane could take him. He was lucky. There was a major-general on board, with a date with a blonde at Laguna Beach. The plane made only two stops between the Atlantic and Pacific coasts.

But Los Angeles, which had been thriving a week before, was nine-tenths deserted when Murfree arrived. Trains ran irregularly and buses practically not at all, and those which did run were scenes of riot as they loaded up.

Murfree spent seventy-five dollars of very hard-saved cash for a ride behind a motor-

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cyclist to a town ten miles from Palo Bajo. He trudged the rest of the way.

The open country was thickly populated and every roadside tree shaded a group of campers from the cities. But there was an extraordinary holiday air everywhere. Murfree was acutely conscious of it as he trudged along the highways with his single hand-bag for luggage.

Since bombs were apt to fall on the cities at any time there were camps and bivouacs of city people everywhere. But since none had fallen so far—and would not fall except on cities—there was a general effect of slightly apprehensive vacationing.

When Murfree trudged wearily into Palo Bajo his feet burned, his shoulders ached, and the muscles of his arms were sore from the unaccustomed labor of carrying a burden. He was worn out and dispirited but he went doggedly to the fairgrounds where the dirt-track races went on.

He went to the pits where the small, souped-up cars were serviced. He felt that there was no time to rest, and anyhow his appearance in an exhausted condition was in line with his plan for locating Bud Gregory. He went to the first pit, where a particularly greasy and especially dilapidated small racing-car was being worked on by two be-smeared individuals.

"Look!" said Murfree heavily, "I've got to find a good mechanic. My car's stalled ten miles back. It ran dry and heated up and froze. I can't get a garage to touch it. They're jammed!"

THE last was true. With every car in California on the road and out of the cities, rural garagemen rubbed their hands in fiendish glee. It was so everywhere. One of these two men looked up gloomily;

"We're busy!"

"But I've got to get my car fixed," said Murfree desperately. "Five bucks if you just tell me where to find a mechanic who'll do the job!"

One of the two got up and pointed.

"Try Mose," he said sourly. "That beefy-looking guy over there. He's bound to be some mechanic because the car he's got ain't any better than this one, and it goes faster and makes turns no car has a right to make. He watches it night and day—blast him—and you won't get nowhere, but you can talk to him."

Murfree handed over five dollars. He limped toward the shed that had been pointed out. A bulky man with squint eyes reared up as he approached. A grease-monkey looked at him suspiciously.

"No visitors!" the big man snarled. "Clear out!"

"I've got a car in a ditch," said Murfree, "and the motor's frozen. I'll pay a hundred bucks for a mechanic to fix it."

"Beat it!" repeated the beefy man, formidably.

"I'll pay you ten bucks if you'll name a mechanic," said Murfree. "I can pay a hundred for fixing it."

He had barely two hundred dollars in the world, and this man was not Bud Gregory. But Murfree was sure he was on the right track. A car that went impossibly fast and made impossible turns. His own car, of course, was imaginary, but he looked worn-out and dusty and very convincing.

The grease-monkey said, drawling:

"That fella could do it, Mose, and ten bucks'd come in handy."

"He'll do it for fifty," the squint-eyed man said shrewdly. "I get fifty or he don't do nothing. Take it or leave it." He turned to the grease-monkey. "You know where to find 'im."

Murfree handed over fifty dollars. He felt weak at the knees. It was enormously important to find Bud Gregory. Nobody else in the world would do!

The grease-monkey came back with Bud Gregory, who looked at Murfree.

"Howdy," Gregory said in an unhappy voice, and looked uneasily around for policemen. Murfree swallowed.

"Hello, Bud. I want to talk to you. Anywhere you say. How about some beer?"

CHAPTER III

Three Racketeers

INSTANTLY Bud Gregory brightened. He was tall and gangling and drooping. He was typically poor-white—Appalachian Highland version—bony and listless. He had worn an air of complacency until he saw Murfree, but that was gone now because he'd made a device which was a neutron-shield and set a monstrous atomic pile to work back in the Smoky Mountains.

Murfree was the man who had found out

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his responsibilty for the devastation which resulted. But on the other hand, Murfree had paid him six hundred dollars for a device which absolutely abolished friction, and with that as capital he had set out to tour the United States without being bothered by detectives, and practically without working.

"Why—uh—sure, Mr. Murfree," said the man who knew by instinct all the things that the scientists of the world struggled to learn. "Beer? Sure! There's a place right close, Mr. Murfree. But I cain't go fur. There's some fellas comin' to see me today. They told me if I'd fix a dinkus for 'em, they'd pay me wages for as long as it works, without me doin' a tap of work more."

Murfree looked at him in envy so great that it was almost hatred. Bud Gregory knew, without knowing how he knew, how to make absolutely anything he chose. He'd made a wire that absorbed heat and turned it into electricity, but he'd done it to save the trouble of mending an automobile radiator in the normal manner, and he had charged just ten dollars for the job.

Bud Gregory had made a shield through which nothing could pass, not even a neutron—and he'd done it to save himself the trouble of replacing that miraculous wire with a tedious job of sheet-metal soldering on the same radiator. He'd made another device, at Murfree's demand, which stopped even neutrons cold—after the shield had started an unshielded atomic pile to work. Gregory could weld broken parts of a motor without taking them out, and could free a frozen motor without so much as loosening a bolt, and lots of other things. But all he wanted was to sit in absolute somnolence and inactivity.

"Come on and get the beer," said Murfree. "I came all the way across the continent to find you. Something's happened that you can fix, and it'll square everything about that business back in the Smokies." He added, "There aren't any detectives with me."

Bud Gregory shambled beside him, frowning.

"Listen, Mr. Murfree," he said uneasily, "I don't want no truck with sheriffs and policemen. I don't even want to square nothin' with 'em. I just want to get along without workin' myself to death, not botherin' nobody and nobody botherin' me."

Murfree ushered him into a tavern opposite the race-track where the souped-up racers ran.

"The point is that somebody is bothering you," said Murfree. "And me. And everybody else. We'll get our beer and I'll tell you about it."

They found a table in the crowded room. Palo Bajo was too small a town to rate an atomic bomb, so in the tavern were clerks and business men and laborers—fathers of families and loudly shirted young men and men who were trying to forget the menace that hung over the country, and men who did not even try to think about it.

Murfree explained as Bud Gregory drank his beer. He explained in words of one syllable that a certain European Power had proved it had rockets which could travel two thousand miles, and atom bombs for them to carry. And, with those up its sleeve, it demanded that the United States give up its way of life and adopt an entirely new social system.

It was ready to blast every city in North America on a moment's notice. If the United States—unready as usual—started to get ready to fight, it would be destroyed. Every big city in the nation would be blown to atoms before preparations for defense could be even halfway completed.

Bud Gregory listened uncomprehendingly. He drank his beer and squirmed in his seat.

"But I don't aim to have no truck with sheriffs and policemen and such!" he protested. "I ain't botherin' nobody."

Murfree explained further. Bud Gregory could devise some defense. He could probably make the defense. If he did, he, Murfree, would guarantee that he would have money enough to live on for all the rest of his life.

"But you're a gov'ment man," said Bud Gregory unhappily. "You're a good fella but I don't want no truck with the gov'ment."

MURFREE sweated. Promises of a fortune meant nothing to Bud Gregory. But Murfree had a hundred and fifty dollars left. He offered that for a device that would protect America against atomic bombardment. Millions had no meaning to Bud Gregory. A hundred and fifty dollars was concrete. He wavered.

"Listen here, Mr. Murfree," Gregory said plaintively. "I got some fellas comin' to see me today. They told me they'd pay me a hundred dollars down and ten dollars a day if I just fitted a car up with the dinkus I got on a friend's car over at the track. I

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don't even have to make it! All I got to do is take it off that racin'-car and put it on their car, and I don't aim to work myself to death for nobody. If I got ten dollars a day coming' in, I'm all set. I can just set and not bother nobody.

Murfree felt sheer desperation. Talk of war and devastation had no meaning to Bud Gregory. He just wanted to sit somnolently in the sunshine. If he could get a hundred dollars without working, he would not work for millions—or even for a more comprehensible hundred and fifty. He was simply impervious.

Then the beefy, squint-eyed man loomed up beside the table. He looked definitely unpleasant now. With him were two other men who looked more unpleasant still. They approached the table.

"How's your car?" asked the squint-eyed man, snarling. "Got it fixed yet?" To the others he said, "He told me his motor was froze!"

Bud Gregory looked up.

"Howdy, gentlemen!" he said cordially. "Mr. Murfree, here, he's a old friend of mine. He's a gov'ment man from the East. I done some work for him back there and he hunted me up. Set down and have some beer!"

The two newcomers' faces went expressionless. The squinty-eyed man looked murderous. Then the three of them glanced at each other. One leaned close to Murfree.

"Don't start anything, Mr. Government man," he said softly. "Me and my friend got guns on you. Buttin' into our affairs, huh?"

He moved suddenly. Murfree felt a horrible impact. Then he felt nothing whatever. . . .

The European Power sent a very pained note to the Government of the United States. The American Government had told its people of previous diplomatic correspondence, thus causing hostility toward the European Power among Americans. And the European Power was devoutly desirous of peace, yet it could not but be alarmed at the increasing belligerency of American public opinion.

Then there was the evacuation of American cities. That suggested nationwide preparation for war. Would the American Government give some convincing guarantee that it did not plan an unwarned attack? Such as the grounding and dismantling of all aircraft, and the decommissioning of its navy?

The European Power was waging a war of nerves. Its purpose was the harassment of the American public—from disorganization, unemployment, and ultimate famine—to the point where it would welcome any possible change. Its plan was to make the American people themselves demand the changes in its social system that the European Power desired.

In Washington, it began to look as if that end might be achieved. Hunger was beginning to show up. Privation was appearing. Looting in the cities had begun. So far a certain amount of holiday spirit still existed, to be sure, but the future looked black.

And Murfree woke up in the back of a speeding car. He had a splitting headache. Bud Gregory sat uneasily beside him. There were three men in the front seat—of whom one was the squint-eyed man—and when Murfree moved one of them turned around.

"Don't try nothin'," he said amiably. "We ain't got any use for you government guys."

HE DISPLAYED a blued-metal weapon and turned back. Murfree's head throbbed agonizedly. He felt nauseated and ill. Bud Gregory rolled unhappy eyes at him.

"Honest, Mr. Murfree, I didn't know they was goin' to act like this," he said miserably. "They offered me a hundred dollars and ten dollars a day to soup up their sedan."

The car sped along the incredibly populated roadside. There were people everywhere. When cities empty, people have to go somewhere. Small towns swarmed. Villages overflowed. Even the highways were lined with groups of people with picnic-blankets and blanket shelters. Murfree rubbed his head to clear it, and closed his eyes at the anguish which came of the movement.

"What happened?" he asked thickly. "Why didn't they kill me?"

The man in front turned around again.

"We wouldn't think of it, fella," he said, grinning. "It was tricky enough crashin' you in a crowded room and draggin' you out as a drunk, without nobody gettin' wise. If we'd shot you we mighta had some trouble gettin' away ourselves."

"What's the idea?" asked Murfree drearily. "Are you spies, or just plain traitors?"

"Huh!" scoffed the man in front. "You talk like the movies! We're just honest guys pickin' up a livin' how we can. Your friend there, has got a little trick that'll be useful to us. He can fix up a car to go faster, stop shorter, turn sharper and have more pick-up—"

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The beefy man, at the wheel, growled at him. He shut up. The pattern wasn't right for spies or agents of a foreign, European Power. Agents of that particular Power, in any case, were packed too full of ideology to talk as this fellow did. These men sounded like yeggs or crooks who'd seen a chance to acquire getaway cars that no cop could overtake. Murfree looked dizzily at Bud Gregory, who grinned uneasily.

"Yeah. That's it, Mr. Murfree. Y'see, I was travelin' across-country, and my car didn't have much power. Motor'd lost a lotta compression. So I put on a dinkus that made her pull up hills. And that's what these fellas want."

"What'd you do?" asked Murfree. His throat was dry and his voice was hoarse. And his head ached and ached and ached.

"*Uh.*" Bud Gregory looked uncomfortable. "You know them little hunksa stuff that metal's made of. They wiggle all around. They wiggle faster when they get hot."

Murfree reflected dully that Bud Gregory, who was practically illiterate, was speaking with precision of the random motion of molecules which is caused by heat.

"I got a kinda idea," said Bud Gregory, "that if I could make all those hunksa stuff move one way instead of all ways, it would push the car ahead. So I fixed up a dinkus that made 'em all move one way. It give my car a lot more power."

Murfree was not astonished. Bud Gregory could not astonish him now. Of course if all the molecules of a substance move in the same direction the substance itself moves in that direction. Using the molecular motion generated by heat, you should get practically limitless acceleration, quite independent of traction.

It should start a car off at any imaginable speed, it should climb any hill, it should stop a car with unbelievable suddenness, and if the motion could be controlled—and hence the thrust—it could keep a car from turning over, and from skidding.

Yes. Also it would be action without a reaction, and it would serve equally to power an ancient jalopy or an aeroplane. Only, an aeroplane wouldn't need wings because the same molecular thrust could lift it, and that meant that it could furnish a drive for a spaceship and provide the direct means for the conquest of the stars.

And Bud Gregory had devised it to make his ancient car climb hills!

"Then one day I seen some dirt-track races," explained Bud Gregory. "I seen fellas bettin' on 'em, so I made a deal with a driver and put my dinkus on his car. He could go faster, so he won, and I'd bet on him, and won some, too. It was pretty easy money, Mr. Murfree, and I don't never figure on workin' myself to death."

"Whatever you use with that drive gets cold," Murfree said dully.

"Yeah," said Bud Gregory nodding. "I use the motor to pull the car, and it gets cold. That's why I run the motor, so's it won't get too cold to push. I been followin' the dirt-track races ever since," he added, "rentin' out my dinkus to drivers an' bettin' on 'em."

AT THIS, Murfree, kidnaped and with his head one monstrous ache, felt again that helpless, irritated envy with which Bud Gregory always inspired him.

Bud had made a heat transformer which turned heat directly into kinetic energy! He'd made a device which could replace every motor on earth by a simpler element, and raise the amount of power available by an astronomical figure! He'd created an invention which could go far toward making Earth a paradise and mistress of far-flung planets —and he used it to win dirt-track races so he could bet two or four or five dollars at a time and so live without working!

Now that same device—which could mean the survival of humanity in those distant ages when the sun begins to cool—that same device would now be applied to provide thieves and holdup men with getaway cars the police could not overtake!

Murfree did not believe his captors were spies or aliens. They were simply criminals. And presently they would very probably kill him, because they'd want the secret of their success to remain a secret and Bud Gregory would doubtless be kept a prisoner as long as he was useful.

And meanwhile that European Power would pile one sardonic demand upon another—making sure that America did not prepare defense—until either the United States adopted the alien social system out of sheer necessity, or was wiped out in blasts of atomic flames.

But there was no use talking about it. Bud Gregory could not grasp the emergency, and these criminals would look upon it shrewdly as simply an opportunity for large-scale activity of their own variety. Murfree felt

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the motion of the car more and more violently in his throbbing head. Vibration was agonizing. The after-effects of the crack on his head manifested themselves, too. Suddenly, from a combination of weakness and pain and exhaustion and a form of surgical shock, he fell into a heavy, unnatural sleep.

And just at the moment that Murfree lapsed into something like a coma-like slumber, the President of the United States took a momentous and quite illegal decision. By law he could comply with the request of the European Power for the grounding and dismantling of all United States aircraft, and for the decommissioning of the battle fleet. By law he could not take any particular action in the situation as it stood. But he did do something. His jaw set, he wrote formal and quite improper orders in his own handwriting. He gave those orders personally to certain high-ranking officers.

"Perhaps this is treason," said the President bitterly. "But I won't see this country go down without a fight! The laws seem to require it, but for once to the devil with the laws! If those rascals over there want a fight, they'll get it. But they won't get an inch more of concession from us without a fight."

And after that, of course, it was simply a question of whether the President's orders could be carried out before the European Power learned that they had been issued. One way, America would be ready to give back as good as it got. The other way meant ruin!

CHAPTER IV

Tough Tactics

NEXT morning Bud Gregory shambled into the room in which Murfree had been placed, his craggy features woebegone.

"Well?" Murfree said sourly.

"Mr. Murfree," said Bud Gregory miserably. "Those fellas certainly fooled me. That squinty-eyed fella, he told me they was good fellas. I been makin' out right good, bettin' on him in the dirt-track races. I ain't had to mend a car in a coupla weeks. I been eatin' hawg-meat and drinkin' beer and not botherin' nobody. But he fooled me!"

"Evidently," said Murfree. His head was horribly sore where it had been hit. He was sick with impotent fury.

He knew, now, that his guess in the car had been right. His captors were simply criminals. They could not see beyond that personal benefit any more than Bud Gregory could see beyond his personal aversion to sheriffs, policemen, and regularly scheduled work.

"He told me," mourned Bud Gregory, "that if I'd take that dinkus off his racin' car an' put it on another one, so's it'd work the same, that his frien's'd pay me a hundred dollars an' ten dollars a day for the use of it. But now they brought me up here and they say I got to fix cars thataway for all three of 'em, and if I don't, they'll fill me full of lead!"

He looked at Murfree as if for sympathy. But Murfree had none for him. When he'd waked from his unwholesome sleep, the night before, it was because the car had stopped. It had stopped here, and even in the darkness Murfree had known it was high in the mountains.

The air here was thin and cold. There was the feel of mountains all about. There was a stone wall and a locked doorway, and he'd insisted upon an interview and the results were unsatisfying.

This was a hideout, much more elaborately fitted out than was to be expected of a party of bandits, but their equipment did not mean greater intelligence. His desperate argument for the release of Bud Gregory and himself that they might tackle the menace facing all America, had been laughed at. It wasn't believable. He couldn't even tell them what sort of device he wanted Bud Gregory to make for the defense of America. He didn't know.

So his arguments were dismissed as amusingly phony. His captors wanted the getaway cars Bud Gregory could fix up for them. They couldn't imagine Bud Gregory as usually employed on anything else. They laughed at Murfree, dizzy and sick from having been knocked out, and put off until morning the question of what they should do with so ridiculously implausible a government man —or to them—detective.

Murfree glared at Bud Gregory.

"Just what do you think they're going to do to me?" Murfree asked bitterly.

Bud Gregory blinked. He had been so absorbed in his own troubles—actual forced labor under threat of death—that he had not thought about Murfree.

"I dunno," answered Gregory.

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"Holdup men!" said Murfree savagely. "Robbers! Thieves! They'll stick up a bank, shoot down anybody who interferes, and streak it away in the cars you'll fix up for them—cars that can dodge through traffic the cops can't follow through, and flee faster than the cops can follow. That's the idea, isn't it?"

Bud Gregory blinked again.

"But sooner or later the cops will track them down! And you don't like sheriffs and policemen? You'll be in a nice fix when the cops arrive and find you working for them!" Bud Gregory squirmed.

"Besides all that, there'll be my murder to account for!" Murfree went on angrily. "I know them now! Do you think they'll turn me loose to tell of their plans and methods? No! They're going to kill me, and you'll be in a jam on that account! I told you I didn't have any detectives with me. I didn't. But plenty of detectives knew where I was going and who I was looking for!

"If you'd played ball with me, everything would have been all square for you. But—I went to look for you. I've vanished. They'll find me murdered, and you in the gang who murdered me. They'll credit you with murdering me, and they'll hang you!"

PART of this was nonsense, and the rest of it was bluff. Murfree was furiously certain that he'd be killed, and he knew that no police work was going on anywhere in the United States, beyond an attempt to prevent looting in the cities and some efforts to preserve order among the hordes of refugees. But Bud Gregory would not realize that.

"And if the law doesn't hang you," Murfree finished, in fine wrath, "your friends will kill you sooner or later. When you're no more use to them, do you think they'll turn you loose to talk, either? Do you think they'll pay you ten dollars a day for what you've done, when a three-cent cartridge will settle the account? Oh, no! You're a dead man the same as I am—unless you do something!"

"But Mr. Murfree!" said Bud Gregory plaintively. "What can I do? All I want is not to bother nobody and not have nobody bother me."

"You might work out some sort of weapon, hang it!" Murfree snarled. Then he said savagely, "Have you had breakfast?"

Bud Gregory brightened.

"Yes, suh! After they ate, they told me to fix somethin' for myself. I opened up a couple of cans of beans. Sure! I made out all right."

"I didn't!" snapped Murfree.

He was acutely aware that he was not being dignified. But he was filled with the particularly corrosive and horrible fury of a man who is impotent to act in an all-important emergency because of an absurdity. The United States was in the most deadly danger in its history, in fact, perhaps in the only deadly danger in all its history. Its only hope lay in a semi-illiterate mountaineer, whose only desire was to sit in utter uselessness.

Murfree's own prospective murder did not cause him one-tenth of the raging revolt he felt for the idiocy that seemed to rule the cosmos. He was, in fact, half crazy with rebellion at mankind and his own maddening sensation of futility.

"Get me something to eat," he snapped. "Coffee, anyhow. They'll shoot me this morning to save the trouble of feeding me. If you had the brains of a goldfish, you'd end this situation in seconds! But you won't do a thing! You'll stand by and watch them kill me, then you'll meekly do whatever they tell you to do, and if the police don't catch you first and hang you, these thugs will murder you offhand when they're through with you. Get out and bring me some coffee!"

Bud Gregory shambled unhappily out of the room. It was seemingly a very casual kind of confinement that restrained Murfree, but when he gazed out of the windows of his room, he grew dizzy. There was a drop of several hundred feet from the window-sill.

This hideout was a small house within a high stone wall above sheer wilderness. It was somewhere on the side of a mountain, apparently on a bold spur jutting out from a precipitous cliff.

As a matter of fact, Murfree learned later that it had been built by a motion-picture director with a wife for respectability and redheads for a hobby, and that it had been acquired for a hideout by his present hosts after the director had been extensively shot up by them, for hire.

There was certainly no escape on this side. Bud Gregory had come in by a seemingly unlocked door, but Murfree was cagey. He peered cautiously out of his door, and then ventured into the next room. He saw why

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his door did not need to be barred.

The rooms of the house opened on a patio, a courtyard, and a rising mountainside showed on only one side. With what he'd seen from his window, everything was clear. The house was built on a spur sticking out of a precipice, and there was empty space on three sides. It could only be left toward the mountain, and that way was undoubtedly barred. And of course, it could only be approached from the mountain, which made for privacy for a man with a hobby, or security for men with bad consciences.

MORE immediately daunting, though, was the fact that two of his three captors were out in that patio. They looked as if they had hangovers and were in a particularly foul mood. As Murfree watched, the beefy racing-driver strolled out and joined them, and the three of them snarled at Bud Gregory, who apologetically shambled out of sight, while the three continued to snap at each other. It was obvious that all was not sweetness and light in this place. The thugs argued profanely. After a moment Murfree caught words.

"He's lyin'! He says he's got to have some parts. Let 'im take a radio to pieces and get 'em. If he don't fix our cars the way we want 'em, let's beat him up!"

The racing driver began to rage.

"Since he don't think we mean it, we could haul his friend out and let Gregory see what'll happen to him if he gets stubborn," he said. "Mebbe that'll make him work!"

Murfree felt a little cold chill and a monstrous rage. They were going to shoot him in cold blood to scare Bud Gregory. And there was absolutely nothing to be done about it.

Then he saw Bud Gregory's head. He'd stopped inside the house on the farther side of the courtyard. He'd listened to them. And his jaw had dropped open. He looked abysmally scared. He vanished.

Maybe he'd duck out. Maybe he'd improvise some incredible device that would open doors, and flee, leaving Murfree to be killed out of hand because he was known to be a government man and was believed to be a detective. If Bud did escape, he would hide again with a passionate earnestness, avoiding police and sheriffs and saying nothing whatever of what he knew.

In that case, the United States was finished. Or if it survived, it would be only as the mutilated remnant of itself. Murfree's own death was the most trivial of incidents in the holocaust certain to occur.

Time passed. The three in the courtyard drank from pocket flasks. One of them pulled out a blued-steel weapon and looked at it reflectively. That would kill Murfree. They discussed some plan they meant to carry out when Bud Gregory had given them uncatchable getaway cars. They cheered up as they talked.

Bud Gregory remained absent. Presently one of them snarled into the doorway into which he had vanished. After a moment Bud came out, holding placatingly a square bit of plank on which was a distinctly messy assembly of small radio parts. He expostulated nervously. He couldn't work so fast, and he needed some parts.

"You're a liar!" snarled the beefy man. "Go get that other guy and bring 'im here. We're gonna show you somethin'!"

CHAPTER V

Heavyside Layer

AT THIS, Bud Gregory sweated profusely. His hands shook. There were two radio tubes and a cryptic assortment of coils and condensers and resistors in the gadget he had mounted on a bit of plank.

He'd obviously worked on it for some time before he'd come in to talk to Murfree, but it did not look like anything. Except for the quite improbable coils—and no physicist in the Bureau of Standards had been able to work out what similar coils in Murfree's sample device did, or on what principle they were based. Apparently there was nothing in sight that a ten-year-old boy might not have gimmicked together at random.

"Go get 'im!" rasped the beefy man. "Or else!"

Bud Gregory cringed. He shambled across the courtyard and into the room where Murfree clenched his hands in a fury so great as to override even despair.

"M-my gosh, Mr. Murfree!" said Bud Gregory, tearfully. "They goin' to shoot you. And I just know they' goin' to shoot me afterward. They told me to bring you back with me."

His bony, angular hands worked feverishly and seemingly at random on the lunatic device he was holding.

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"I showed 'em this to show I was tryin' to work like they said," said Bud Gregory piteously, "but they want me to bring you out there. They goin' to shoot you, Mr. Murfree!"

Murfree choked in rage, and swallowed a cold lump in his throat. He opened his mouth, perhaps to speak noble final words, but more likely to swear in utter fury.

"I'm—changin' it, Mr. Murfree, so's they can't shoot you," Bud said shakily as he worked. Sweat rolled down his face and panic filled his eyes. "It's a dinkus that makes those little hunksa stuff that metal's made of, all travel the same way. It makes some stuff that bounces around in any metal it comes to. I—I got to make it travel where I want it to through the air." He panted. Almost he sobbed. "All I ever wanted, Mr. Murfree, was not to bother nobody. If those fellas get killed, you got to tell the sheriff it ain't my fault!"

A stray wire, connected to heaven knew what at one end and nothing in particular at the other, took shape as an oddly beautiful curve under his twitching fingers. It was, Murfree saw, almost parabolic. But it was not a parabola. It was some sort of unsystematic curve in which Murfree could begin to see the beginning of a system.

"If I can get it finished, Mr. Murfree," chattered Bud Gregory, "they won't know when it's turned on, and they can shoot at you, and if I got it pointed at them—"

There was a snarl. The beefy man loomed up, a pistol out. Bud Gregory had gone after Murfree, and he had delayed. Both men, their captors knew, were unarmed, but they might get ideas of resistance. So the squint-eyed man had come to see. And he'd heard.

He roared profanity at Bud Gregory, who had told Murfree he was to be killed. But Bud was still valuable. The beefy man raised his weapon and shot point-blank at Murfree. The muzzle was no more than ten feet from Murfree's body, and it spewed bullets straight for his heart.

And then the beefy man jerked ridiculously, and an expression of incredulous astonishment came over his face. He staggered, and put his hand to his side, and then collapsed very slowly to the ground. Bud Gregory yelped in anguished terror.

"You got to tell the sheriff, Mr. Murfree, that he done it himself," he wailed. "You got to!"

Murfree had thought that Bud Gregory could not suprise him, but he was blankly amazed to be alive. For a second he merely stared. Bud Gregory shook and trembled beside him, the contraption in his hands jiggling as he trembled. A little wire somewhere in it was turning white with frost.

Then Murfree moved with the dazed, desperate calm of a man who has seen a miracle. He picked up the beefy man's pistol.

"Come on," he said thickly. "Let's shoot our way out of here."

He started forward. But as he stepped out into the patio, the two remaining captors swore. They'd heard the shots. They'd looked for the beefy man to return, driving Bud Gregory before him. When they saw Murfree, instead, with the beefy man's pistol in his hand, they gaped at him.

"Hands up!" said Murfree desperately. He added foolishly: "Surrender in the name of the law!"

ONE of the two men fired from his coat-pocket, a burst of shots which emptied the magazine of his automatic pistol. He collapsed, kicking, to the ground. The other man aimed deliberately and Murfree tried to shoot him, but a civilized man's instinctive repugnance to bloodshed made his hand shake so that he couldn't pull the trigger.

The other man fired with a cold precision at Murfree—and dropped dead with a bullet in his brain. His own bullet. Bud Gregory wailed in unholy terror. But he held his little gadget safe, and even remembered to turn it off.

Miles away, a secret short-wave set sent a message from a hillside in the United States. Another set received it far away. It went into code, went over a cable in the guise of a completely innocent message, reached the capitol of a certain European Power, was decoded, and rushed to the ruler of that Power. He read it and cursed.

The United States could not fight according to law, but it was going to fight in defiance of its own acts of Congress. Orders had been given and, though illegal, they were being obeyed. Disarmed aircraft were fueling and loading up with bombs, carriers were putting desperately out to sea, and in a matter of hours the United States would be ready to defend itself.

The ruler of the European Power was angry. He would have preferred to take over the United States as a merely famine-racked, desperate, and babblingly grateful nation of

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folk whose spirit had been broken by a war of nerves. He had intended to seize its industrial plants intact and its cities undestroyed. But since the fools had belatedly shown dangerous intelligence, and were preparing to fight rather than be destroyed by their traditional reluctance to take the offensive—why, they would have to be smashed before they could get ready to resist.

He gave crisp, ruthless commands. He hadn't really believed they would fight, those democratic fools. Still, in fifteen minutes the first salvo of long-range guided missiles would be on the way, and other salvos would follow at two-minute intervals. And in a matter of an hour or so North America would be like a knacker's stall and the rest of the world would have had an object-lesson!

And in the hideout, Bud Gregory sat with his bones seemingly turned to jelly.

"What the devil happened?" Murfree asked unsteadily. "And we've got to get busy making something that'll stop an atom-bomb bombardment of America. Talk, man! Something may blow us up at any minute!"

"You—you got to tell the sheriff I didn't do nothin'," quavered Bud Gregory. "I didn't kill those three fellas, Mr. Murfree. They done it themselves. You'll tell the sheriff that. I don't want to have no trouble."

"Talk!" commanded Murfree. "We've got to work out something. What've you got there?"

Bud Gregory swallowed. He trembled uncontrollably.

"I told you I made a dinkus, to make my car pull up hills," he whispered. "It's some stuff that—uh—bounces around in stuff that conduc's electricity, Mr. Murfree. I told you about it. All the little hunks in metal that stuff gets in, have to move the same way. I made it make my car climb hills, and then I fixed it so I could make them little hunksa stuff act as brakes, too. They could even push the car backwards, if I wanted 'em to. And I—been makin' a livin' bettin' on a fella I fixed the dinkus on his racin'-car. That—that fella—I had his car fixed so it couldn't turn over, either."

Murfree listened in an unnatural calm. He knew all this, of course. Bud Gregory was not a genius. He was something so far beyond mere genius that there is no word for it.

He simply knew, instinctively, all the things the physicists of the world hope to find out in a hundred years or so. He was able to scramble together absurd-looking devices that turned heat into electricity, and made common dirt form an atomic pile, and the random molecular movements due to heat convert themselves into kinetic energy.

BUD GREGORY could make a spaceship that would travel among the stars, or he could make devices which would turn Earth into a paradise. Also, he could make dirt-track racing automobiles run faster!

"When I realized they were goin' to kill both of us," he said abjectly, "I got scared. So I took the dinkus I had 'most finished and changed it a little bit, and then, instead of makin' things move faster, it turned 'em back. Somethin' that didn't move fast didn't get changed, but anything like a—uh—bullet, when I turned my dinkus on it, the faster it was goin', the faster it got flung back. And—uh—of course it got flung back straight to where it come from."

Murfree was strangely calm, as any man would be who had seen his would-be assassins drop dead from their own bullets fired at him and bounced back in a straight line. When miracles happen, one is stunned to calmness. Now he nodded his head slowly. "I—see," he said. "When bullets ran into the field you projected, it was like hitting an elastic spring. Your field absorbed their energy, and stopped them, and then fed their energy right back and made them return to where they came from, in the same line and at the same speed they'd started with. That's it?"

"Yeah, Mr. Murfree," said Bud Gregory pallidly. "That's it. You'll tell the sheriff I didn't kill those fellas."

"Oh, yes," said Murfree, slowly. "I'll tell him that. I take it you didn't project a field to make racing-cars run faster, though?"

"No, Mr. Murfree," said Bud Gregory, shivering. "I run it through a wire to the motor. But I can throw it, and when it hits somethin' that carries 'lectricity, it bounces all around and stays there. It don't bother rocks or glass, none."

"I see," Murfree said in numb tones. "Most interesting. Now we've got to stop an atomic attack on America." Then he stood absolutely still for a long moment. "Look here," he said. "Will it bounce around in a gaseous conductor? Gas that has ions bouncing around so it will carry a current?"

"Yeah," said Bud Gregory. "Of course, Mr. Murfree."

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"What you're going to do now," said Murfree with really monstrous tranquility, "is to make a big version of that dinkus in your hand. A really big one. So we can turn it straight up and shoot that field into the Heaviside Layer. Do you know what that is? It's a layer of ionized air that covers the whole earth about fifteen miles up. You're going to make a dinkus that will fix the whole Heaviside Layer so that anything that's shot into it will be bounced right back where it came from, just like those bullets did. If you don't I'll either kill you or tell the sheriff on you."

Bud Gregory blinked at him.

"I don't have to make a big one, Mr. Murfree," he said plaintively. "This here one will fix anything. It don't take no power. The power comes from the things that get flung back. All I got to do is this, Mr. Murfree!"

He put his preposterous, untidy device on the ground, and bent the curiously curved wire so that the flatter part of its unsystematic curve was parallel to the ground. He threw a small switch. The two radio tubes glowed. A small wire turned white with frost.

"Nothin' can get through that layer now, Mr. Murfree," he said anxiously. "Now about this sheriff business. . . ."

In the sprawling, far-flung territories of a certain European Power columns of vapor suddenly screamed skyward at breathtaking accelerations. There were hundreds of them. They were the guided missiles which were to destroy America. They carried atomic bombs. They should make the better part of the continent into blasted, radioactive craters.

From the nations which were satellites of the European Power other columns of vapor streaked skyward. More bombs. They should surge furiously through the air to the chill emptiness beyond it, and they should circle a good part of the earth and then drive furiously down and spout ravening atomic flames!

YET they didn't. They went skyward, to be sure. They vanished in emptiness. And men on the ground prepared to send others after them. But they didn't do that, either.

The guided missiles roared into the thin, invisible Heaviside Layer of the earth's atmosphere, whose peculiarity is that it has been ionized by the sun's rays and therefore has a specific electrical conductivity. The rocket-projectiles were made of metal. They went raging into the ionized gas in which "stuff" which only Bud Gregory could understand was—in his words—"bouncing around."

And there they stopped. They exhausted their fuel in a furious, terrible duel with implacable and quite incomprehensible forces. The energy they possessed was somehow absorbed, and then their fuel cut off and all the energy they had parted with was restored to them and they went hurtling back toward the earth—toward the exact spot from which they had been discharged.

They were equipped with very sensitive fuses. Even the terrific velocity with which they struck their own launching-sites did not keep the fuses from working. The atomic bombs they carried exploded. They blew up their own launching-sites. More, they blew up the other bombs on the other guided missiles waiting to form the second and third and twentieth salvos.

Very many large areas of a certain European Power became monstrous craters. Unparalleled craters. Chasms going down to the molten rock below the earth's crust. There were similar craters in the satellite nations. But there were no craters in America. Not even little ones. No atom bombs fell on the United States.

When the President of the United States barked a grim and defiant message to the European Power, he knew nothing of the craters. They had been made only five minutes earlier. He simply barked defiantly that the United States wasn't going to change its government or its way or living for anybody, and it would fight anybody that wanted a fight.

But nobody did. In fact, neither the European Power nor its satellites were apt to fight anybody for a very, very long time.

And, of course, Murfree went back home. He was quite broke when he got there, and he could have been fired from his Civil Service job for taking leave without permission. But since almost everybody else had done the same thing, his offense was graciously pardoned. He was, however, deprived of pay for all the time he had been absent.

The thing that makes him mad, though—

No, there are two things that make him mad!

When it was clear that there was no further danger to America, he turned off Bud

(Concluded on page 113)

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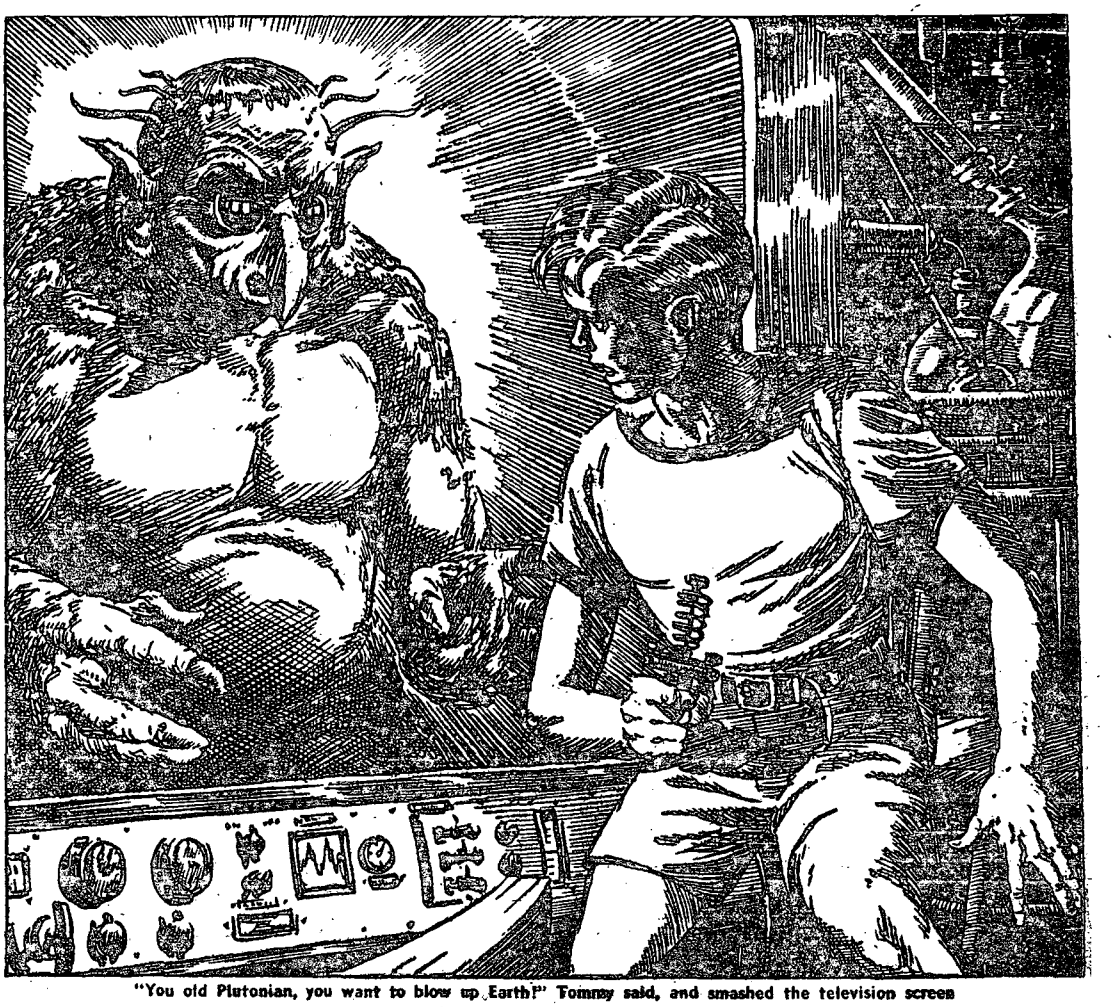

"You old Plutonian, you want to blow up Earth!" Tommy said, and smashed the television screen

FROM BEYOND THE STARS

By WILL F. JENKINS

Tommy Driscoll, ten-year-old scientist's son, emulates one of his favorite heroes when the Earth is in peril

TOMMY DRISCOLL lay on his stomach in the grass outside his father's laboratory and read his comic books. He was ten years old and wholly innocent of any idea that Fate or Chance or Destiny might make use of him to make the comic books come true.

He was clad in grubby shorts, with sandals, and no socks or blouse. Ants crawled on his legs as he lay on the ground, and he absently scratched them off. To the adult eye he was merely the son of that Professor Driscoll who taught advanced physics at Harwell College, and in summer vacation puttered around with research.

As such, Tommy was inconsiderable from any standpoint except that of Fate or Chance or Destiny. They had use for him.

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He was, however, wholly and triumphantly a normal small boy. As he scratched thoughtfully and absorbed the pictures in his comic book, he was Space Captain McGee of the rocket-cruiser *Omadhoum,* gloriously defeating—for the fifteenth time since he had acquired the book—the dastardly scheme of the Dictator of Pluto to enslave the human race to the green-skinned stalk-eyed denizens of that dark planet.

A little while since he had been the Star Rover, crimson-cloaked and crimson-masked and mysteriously endowed with the power to survive unharmed the frigidity and airlessness of interstellar space. As the Star Rover, he had triumphantly smashed the attempt of some very unpleasant Mercurians to wipe out the human race so that they could emigrate to Earth.

As both splendid figures, at satisfyingly frequent intervals, Tommy had swung mighty blows at the jaws or midriffs of Mercurians, green-skinned Plutonians, renegade Earthmen, and others.

But he had just finished reading both comics three times in succession. He heaved a sigh of comfortable mental repletion and rolled over, imagining further splendid if formless adventures with space-ships and ray-guns.

Locusts whirred monotonously in the maple trees of Harwell College campus. His father's laboratory was a small stone structure off the Physics Building, and Tommy waited for his father and Professor Wardle to come out. When they did, he would walk home with them and possibly acquire an ice-cream cone on the way. With luck he might wangle another comic.

HE HEARD his father's voice. Talking to Professor Wardle, who was spending the week-end with them.

"There's the set-up," said his father inside the laboratory. "Absurd, perhaps, but this Jansky radiation bothers me. I've found out one rather startling thing about it."

"My dear fellow," Professor Wardle said drily, "if you publish anything about the Jansky radiation the newspapers will accuse you of communicating with Mars!"

Tommy knew by his father's tone that he was grinning.

"I've not thought of anything so conservative. Everybody knows that the Jansky Radiation comes from the direction of the Milky Way and from beyond the Solar System. It makes a hissing noise in a sensitive short-wave receiver. No modulation has ever been detected. But no explanation's been offered either." *

Professor Wardle moved, inside the laboratory.

"What's the startling fact you've discovered?" he asked.

"It's got a point source," Tommy Driscoll's father said, and Tommy could tell he was still grinning. "It comes from one spot. There's a second-order effect in our atmosphere which has masked it up to now. I can prove it."

Tommy chewed on a grass stem. As the son of a professor of physics, he was disillusioned about scientists. They were not like the scientists of the comic books, who were mostly mad geniuses with plans to make themselves Emperors of Earth and had to be foiled by Captain McGee or the Star Rover. Tommy knew pessimistically that scientists just talk long words. Like his father, now. But Professor Wardle seemed startled.

"A point source! But confound it, man! That would mean it's artificial! Not natural! That it was a signal from beyond the stars! What else could it mean?"

"I'd like to know myself," said Tommy's father ruefully. "I've checked for interruptions like dots and dashes, and for modulations like our radio. I've made sure it isn't frequency modulated. The only thing left is television."

"Therefore the television screen," said Professor Wardle. "I see. You're trying to analyze it with a scanning system. Hm. . . Possible. But if it is a signal from another Solar System—"

Tommy Driscoll sat up straight, his eyes wide and astonished. His mouth formed itself into a particularly round O. This, of course, was the natural occurrence if Fate or Chance or Destiny was to use him to make the comic books come true. He had been listening with only a fraction of his ears. To a ten-year-old boy, adults do not often seem intelligent. Few of them have any interest in Space Captain McGee or the Star Rover.

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*Note: The Jansky Radiation as described, is an actual and so-far-unexplained phenomenon. It does come from beyond the Solar System from the general direction of the Milky Way. It does affect sensitive short-wave receivers. It's cause is as obscure as its reality is certain. K. G. Jansky, of the Bell Telephone research laboratories, has described his discovery in the Institute of Radio Engineers Proceedings (I.R.E. Proc.) Vol. 20, No. 12, 1932, and Vol. 23, No. 10, 1935. It has further been discussed by G. C. Southworth in Jour. of F.I., Vol. 23, No. 4, April, 1945.

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But Tommy's father was talking about interplanetary communication! Of signals from the planets of another sun! From creatures who might be super-intelligent vegetables like the Wangos the Star Rover had to fight, or immaterial entities like those misty things that almost defeated Captain McGee on the Ghost Planet because when he swung his mighty fist there wasn't anything solid for him to hit. Tommy's father was talking about things like that!

He got up and gazed in the open door of the small laboratory. He regarded the rather messy assemblage of equipment on the workbench with bright-eyed, respectful awe. His father nodded.

"H'llo, Captain," he said to his son. "No hot wires around. Come in. What's on your mind?"

Tommy's eyes shone.

"Uh—you were talkin' about signals from another planet."

"I see," said his father. "Right up your alley, eh? I hadn't realized the popular appeal. But if you'd like to listen—"

Tommy fairly quivered with eagerness. His father threw a switch. There was a tiny hum from a loud-speaker, then silence. Then, presently, there was a tiny hissing noise. Just a hissing sound. Nothing else.

"That's it, Captain," his father told Tommy. "That's the noise the Jansky radiation makes. When we turn this dial we tune it out this way"—he demonstrated—"and also when we turn the dial that way. Then we tune it back in." He proved it. "Nobody has ever explained it, but it comes from outer space. I think it comes from just one spot.

PROFESSOR WARDLE, smoking a pipe and sprawled in a chair, nodded amiably at Tommy.

"Yes, sir," Tommy said, thrilled.

His throat went dry from excitement. His father threw a second switch. A television-screen glowed faintly.

"Now it's transferred to the screen," he told Tommy, "but it's still all scrambled. Nothing happens, It's quite a job to unscramble a television signal even when you know all about the transmitter. If there's a transmitter sending this, I don't know any of its constants." Over Tommy's head he said to Professor Wardle, "The possible combinations run ten to the ninth."

Professor Wardle nodded.

"Lines per inch, size of screen, images per second, possible colors." He grunted. "Then the scanning pattern and possible three dimensions and so on. You've got several billion possible variations, all right!"

"Unscramble it, Dad!" said Tommy eagerly. "Please! I want to see what the people look like who're sending it! Do you think we can lick them if they get tough?"

"I'm telling you," his father explained, "that I can try several billion ways to unscramble this supposed signal. Even if it can be done, only one of them will be right. It's going to take time."

"But, Dad, *please* try!"

Tommy was filled with infinite excitement. Which, of course, was not only necessary if the comic books were to be made to come true, but was wholly normal small boy.

Here was an interstellar signal! He had heard it! Tune the set right and he would see—maybe something like the giraffe-men who almost killed Captain McGee on the Planet of Sand! Or the frog men the Star Rover had to fight when a crippled space liner was forced to descend on the watery planet Alith!

"I've got to figure out a way to unscramble it, Tommy," his father said. "I've got to calculate the settings that are most likely to show some change on the screen. It's rather like breaking a code. It will take a couple of weeks to compute a series of settings to try one after the other."

Tommy was unconvinced. He argued. Space Captain McGee's friend Doc Blandy would simply have whipped out his trusty slide rule and made the computations in seconds. He would push the slide back and forth, set the television controls according to his computations, and say, "On the beam, McGee!" And Space Captain McGee would gaze into the television-screen and see the worm monsters of Blathok about to chloroform Jenny—Captain McGee's girl friend—to transfer the brain of a worm-monster into her skull. Her body would thereafter house an inveterate enemy to the human race, with specific plans for annihilating it.

Tommy argued. Impassionedly. In the end his father had to resort to authority to stop his arguing. And then Tommy was tempted to revert to his former disillusionment about scientists.

But continued belief offered high reward in excitement. So he believed. Still it was a rebellious small boy who accompanied his father and Professor Wardle home. Even

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the expected ice-cream cone did not console him. He consumed it in an avid gloom. His father tried to comfort him.

"After all, we're not sure," he told Tommy. "It might not be a signal at all. Or it might be a signal of a type that would seem simple enough to the creature who sent it, but hopelessly complicated to us. They might be so much farther advanced in science. In any case, it's not a thing to be solved off-hand."

"But you're going to try, aren't you, Dad?" asked Tommy desperately. "You said it wouldn't do any harm! You said we could lick them! They couldn't harm Earth!"

"I'll try," his father assured him. "It's simply useless to go it blind. That's all. I'll have my calculations done in a couple of weeks, and you can watch while I try the whole business. All right?"

Tommy gulped. He was unable to speak for disappointment. When one is ten years old, odds of billions to one are negligible, but two weeks of waiting is eternity. It is exactly the same as never. And this, too, was not only in the necessary pattern of things if the comic books were to come true, but it was perfectly natural small boy.

THAT night Tommy went rebelliously to bed the third time he was told. He had hung around his father and Professor Wardle, listening hungrily to every incomprehensible word they said. He was keyed up to enormous excitement.

He slept only fitfully. The comics had been a make-believe world in which he believed only with a book in his hand. Now they promised to become real, and he was filled with a monstrous hunger for the adventure they promised.

He woke at dawn and his lurid, fitful dreams had made him ripe for desperate and daring deeds. He slipped into his shorts and sandals and went downstairs. He gulped a huge glass of milk and stuffed down an ample slice of cake.

Then he came to a grand and desperate resolution. He slipped out the back door and trudged across the dew-wet campus to his father's laboratory.

He wormed unseen into the small building. His heart beat fast. He was scared, but he was Space Captain McGee and the Star Rover all rolled into one—in his own mind—and definitely he was ten-year-old Tommy Driscoll. He remembered, of course, how his father had turned on the short-wave set and the television screen. No small boy could forget those items!

He sat down before the controls and threw the two switches with a grandly negligent gesture that Captain McGee himself could not have bettered. And then he started, blindly but with infinite confidence, to unscramble the Jansky Radiation.

He was one-half making believe, and one-half deadly earnest, and all absolute faith. Naturally. The odds against any one setting of the controls being the right one to unscramble the Jansky radiation were several billion to one. But the heroes of comic books always win against odds like that.

So did Tommy Driscoll. The comic books were fated to come true.

The faintly glowing television-screen quite impossibly flickered as he turned the controls. His heart pounded. He worked on, his eyes shining and his head far above the clouds out in interstellar space with Captain McGee and the Star Rover.

Presently, quite impossibly, the screen became a steadily pulsating rectangle which at its brightest was very bright indeed. He found a maximum brightness on which he could not improve. He worked other controls at random.

One made odd streaks appear on the screen. At the peak of streakiness, Tommy's heart was thumping in his throat. He, Tommy Driscoll, was about to make contact with the people of another planet, circling another, distant sun!

Another knob suddenly gathered together the streakings and the pulsations. They made the vaguest of patterns, and then the fuzziest of images. His hand shaking uncontrollably, Tommy Driscoll continued to turn that knob with the slowest possible movements.

He had a flash of clearness, and his heart leaped. Then everything was fuzzy again. He turned the knob back, his breath coming in excited pantings.

And then, in total defiance of the laws of Chance, but in strict obedience to Fate and Destiny, there was abruptly a perfectly clear picture on the screen. It was not a picture of any place on Earth, but of somewhere else—a place so alien in every respect that Tommy would never be able to describe it. And there was a Thing looking out of the screen at Tommy Driscoll!

His heart did multiple flip-flops and he shook all over. But it shocked him much

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less than it would have shocked an adult, because he was wholly familiar with such apparitions from the comic books.

This Thing looked rather like the people on the planet Zmyg, who had tried to wall up Captain McGee in a glass pyramid so he would roast to death when their purple sun rose above the horizon. But also It looked rather like Mr. Schneider, who mowed the lawns on Faculty Row. And It grinned at Tommy.

"Hello!" he said in a clear treble, which shook uncontrollably with his excitement. "I'm Tommy Driscoll of Earth. We're friendly if you're friendly. We're tough if you're tough. How about it?"

That was an exact quotation from the comic book in which Captain McGee had made contact with the people of the System of the Twenty Suns—and later had to fight against swarms of space-ships which wanted to capture his star maps so they could find Earth and attack it treacherously, without warning.

The Thing answered Tommy.

IT DIDN'T use words, of course. But in the comic books mind-to-mind communication of alien peoples is common enough. Captain McGee had done it more than once, and the Star Rover frequently, wandering more widely than McGee, as he did.

Tommy knew what the Thing was saying, and his piping small-boy voice answered in his father's laboratory, and he knew that the Thing understood him, too. The comic books were specifically coming true.

The Thing spoke respectfully and cordially, though of course it did not really speak at all. Its people wanted to be friends with Earth. Of course! They had been watching Earth with radar for centuries, so It told Tommy jovially. They knew that sooner or later Earthmen would roam the stars and benevolently rule all the planets of all the suns of the Galaxy in which Earth is placed. Because, of course, Earth has uranium and other heavy metals supplying atomic energy, while other planets are not so fortunate.

Tommy's eyes glowed. But he was extraordinarily composed, in the heroic calm of children in exciting make-believe.

"Oh, sure!" said Tommy largely, to the Thing of outer space. "We're going to have a Space Patrol that will make all the people on all the planets behave. I'm going to be a captain in it. Maybe we'll come and visit you first of all. How far away are you?"

The Thing could not tell Tommy in mind-to-mind converse. The thought it had could not be translated into words by Tommy Driscoll's brain. But the distance was very great, and It explained quickly that they were able to talk over so vast a chasm as if face to face because of—

Again Tommy's brain was not able to translate the mental impressions he received. He could recognize the meanings the Thing wanted to convey, if the meanings were stored away in his memory. But naturally, complex technical concepts were simply not in his vocabulary. The Thing seemed satisfied to fail.

"Have you got space-ships and ray-guns and gravity nullifiers and mysterious rays?" asked Tommy eagerly. "Our scientists haven't even made ray guns yet!"

The Thing said that of course Its race had such things. It added encouragingly that men would have them soon, of course. With heavy elements—even copper and iron—it would be easy.

Then an overtone came into the thoughts that crowded into Tommy's brain from somewhere beyond the stars. Tommy did not notice the overtone at first. It was a feeling of eagerness and triumph and of a sneering superiority.

Tommy got just a momentary impression of Its thought of a Space Patrol subjugating all the Galaxy to Earth. And the barest, instantaneous flash of hatred because of that thought. But he was too much excited to notice. He was absorbed in his question about ray guns.

It said that they were simple. In fact, It would tell him how to make one. And It began, simply, to explain—a bit of copper wire, twisted just so, and a bit of carbon and a morsel of iron.

It urged Tommy to make one immediately. It would guide his hands. The adjustment of the iron and carbon was delicate.

Tommy was a small boy, and he sturdily controlled his own hands. In the end the Thing simply told him what to do. He made the contrivance It suggested, putting the wire and iron and carbon together on a bit of board, having salvaged them from his father's supplies.

The result did not look too impressive, to be sure. It did not even look like a ray pistol, and that may account for what ultimately happened. Because when it was finished and Tommy regarded it with a faint and illogical

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disappointment because it didn't look like Captain McGee's ray pistol, he suddenly felt the eager triumph in the Thing which had instructed him.

He glanced at the screen, and the Thing was looking out of it with a ravening, unguarded hatred in Its expression. To Tommy it abruptly looked like the leader of those Mercurians who had wanted to wipe out the human race so they could emigrate to Earth. And suddenly he realized that It hated him and all of humanity with a terrible, burning fury.

"Say!" said Tommy Driscoll, his small-boy's hands clenching and his brows contracting in the best possible imitation of Space Captain McGee. "This don't look so good!" His voice wabbled suddenly, and he swallowed. "I'm going to ask my father about this!"

THE THING argued. Plausibly. Flatteringly. But Tommy felt corrosive hatred behind the ingratiating thoughts. Somehow It reminded him of the Dictator of Pluto in one of the comic books he had read only the day before. It asked almost sneeringly if he was afraid.

"Scared, no!" said Tommy in his clear treble, but with the portentious grimness of McGee. "I'm just cagey! I'll have my father look this over to see if it's what you say it is!"

Then the Thing raged. Into Tommy's brain there came such menaces, such threats, that his mind reeled. There was authority there, too, and at ten years one is accustomed to obey authority.

But there was sudden deep suspicion in Tommy's mind, too, and he was fortified by all his knowledge of how the Star Rover and Captain McGee behaved when defying worm monsters and giraffe-men and immaterial entities and other non-human races.

As the Thing raged at him, trying to overwhelm his will with iterated and reiterated commands and threats and sneers and mockery and derision and everything else which should have made Tommy try out his gadget —as the Thing raged at him, Tommy fought sturdily, but under a strain which manifested itself as terror, and then panic, and then as hysterical defiance.

Which, of course, was essential if the comic books were ordained by Fate and Destiny to come true.

Tommy was white and shaking and terrified when he got home. His family was at breakfast. He went into the dining room on leaden feet and with a whipped, scared look on his chalky-white face. It was nine o'clock. Tommy had slipped away at sunrise. Now he returned, carrying a seemingly crude and seemingly purposeless object in his hand. It was made of copper wire with a bit of carbon and a morsel of iron.

"Where've you been?" demanded his father sternly. He didn't call Tommy "Captain," which meant that Tommy was in disgrace.

Tommy looked at his father numbly. He shook all over.

"I said, where have you been?" his father repeated. "Your mother and I have been worried!"

Tommy swallowed. Then, suddenly, he went all to pieces. He burst into raging tears and flung the contrivance the Thing had described into the midst of the breakfast table dishes.

"That old Thing!" he sobbed in hysterical fury. "It was in the television screen and it told me how to make this ray gun! And it—it told me to turn it on and I was going to when I remembered that octopus scientist from Centauri who left a note for Captain McGee to make something, and signed it Doc Blandy, and if he'd made it it would have blown up the whole Earth!"

His father and mother stared. To have one's small son arrive at the breakfast table in a state of frenzy is upsetting. It is worse when he flings odd objects on the table and shatters a flower vase, while sobbing of impossibilities.

"What—what's this?" asked his father, at once startled and uneasy. "What are you talking about, son?"

Tommy beat on the table with his fists. He blubbered, but he babbled with the starkly precise articulation of hysteria. His face was utterly white. He was beside himself.

"I—tuned in the set in the laboratory!" he cried, in little sobbing bursts of speech. "I—unscrambled it! And the—Thing looked at me . . . It was a Thing that hated humans! It told me how to make this and—and—"

Tommy's father went pale, himself. He got up quickly and his chair fell over backward. He tried to touch Tommy comfortingly, but Tommy thrust him away.

"Too many comic books," said Tommy's father, frightened. "I'll get him to the doctor."

"I—guessed what It wanted!" panted Tom-

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my, sobbing. "And It knew what I was thinking and It got mad! I knew It got mad! It laughed at me and asked me if I was a coward and scared to try the thing I'd made! And I said, "You old Mercurian! You old Plutonian! You want to blow up Earth!' And I went *bang*. I sma-smashed that t-television screen and I sm-smashed—"

Then Tommy buried his head in his mother's lap and howled. And his father and mother looked at each other, white-faced, because they thought his mind had cracked. Even temporarily it was awful to think about.

But then Professor Wardle, breakfasting with them, said very softly:

"Great heavens!"

HE WAS looking at the contrivance Tommy had made under the Thing's instruction. It wasn't quite like anything that anybody on Earth had ever made before, but a scientist looking at it would see more than Tommy could have imagined. Professor Wardle saw aspects that made sense. Then he saw things that he could understand but could not possibly have devised. And then he saw the implications.

"L-look!" said Professor Wardle, dry-throated. "It's true! L-look what he made! Wh-what this thing would do—"

With shaking hands he disconnected a wire so it could not possibly be turned on by accident. Then he trembled.

Tommy wept himself back to something like composure in his mother's arms. The antics of his father and Professor Wardle helped, of course. They babbled at each other over his contrivance. They looked incredulously at each other. Then they drew diagrams at each other, talking feverishly.

Then Tommy's father remembered him.

"Captain," said Tommy's father, and there was sweat on his face, "you did a good day's work, all right, but please don't do it again without warning me! This—this contrivance of yours isn't a ray pistol. It's a thing that will start a chain reaction in carbon and iron. If you'd turned it on, all the carbon and iron within its range would have started to act like an atomic pile, and it would have spread, and we couldn't have stopped it. There—wouldn't have been any more Earth."

Tommy blinked at him, catching his breath from time to time as a small boy will do after desperate weeping. Then his eyes began to shine.

"Gee!" said Tommy. "That—that Thing was trying to destroy Earth, wasn't he? And I stopped him!"

"He was," said Tommy's father in a very queer voice indeed, "and you did. If a grown-up had been in your place, the trick would have been different, and it probably would have worked."

Tommy ceased to catch his breath. He glowed.

"I was like Captain McGee!" he said breathlessly.

Tommy's father swallowed. He needed to hold tightly to his self-control. He, like Professor Wardle, had all the sensations now of a man who has just realized that his life, and that of his family, and that of every other human being on Earth, had hung by a hair for seconds.

But he saw, too, that the deadly small contrivance which had *not* annihilated humanity made use of and so revealed exactly the new principles Earth's scientists needed most urgently to know. It would mean atomic engines and power and space-ships and ray-guns. They would mean a Space Patrol to protect Earth against just such creatures as had been foiled by Tommy Driscoll. And that meant—

"Yes," said Tommy's father gently. "Just like Captain McGee, Tommy. It appears that the comic books are coming true."

COMING NEXT ISSUE

IN THE CARDS

A Fantastic Complete Novelet of a Twist in Time

By GEORGE O. SMITH

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Chaotic thoughts rushed through Dr. Craig's mind and he wondered whether he dared read his report from Praggor

YOU ARE FORBIDDEN!

By JERRY SHELTON

Facing ruin and tragedy, Jules Craig dares to fling aside the curtain of the future—and investigate his own fate!

DR. JULES CRAIG, P.L.L. was unhappy. He was famous. He was young. He was talented, healthy, successful. He carried the distinguished degree of P.L.L. He had everything!

But he was unhappy.

He sat at his tastefully furnished desk, shuffling the Life-Line charts of the patient seated across from him. The patient awaiting the diagnosis was nervous.

Poor devil! Craig thought. This man is going to die. He doesn't know it—and I can't

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tell him.

A wave of pity swept through him, intensifying his own brooding unhappiness. Despite the fact he had instructed his psycho-color experts to design his inner consultation office in as soothing a shade as scientifically possible, the patient was sweating profusely, awaiting the verdict. The room was comfortably air-conditioned.

The patient was a little fat man. The face was putty-white. Eyes shifty, breathing rapid, voice shaky and twisting of the hat. This man would be dead in three weeks, and he, Dr. Jules Craig, had to lie to the man. With an unpleasant sensation, he summoned his resolution, looked at the name near the upper left-hand corner of the charts, and spoke.

"You have no cause for worry, Elder Wayman," he said. He forced his voice to sound as smoothly professional as possible. "The diagnosis of your Predictable Life-Lines are clear and definite. I know this matter has been a strain upon you, but you cooperated well. Your own reports, and the necessary Crystaleen Cell you have been wearing during these last three months gave all the details I needed."

He began to shuffle the Life-Line charts again as if reading them. He heard his voice go into the routine patter used on such unfortunate cases as this.

The irony of what his professional voice was saying to this little fat man burned another scar into his heart. The Predictograph had predicted this man would be dead within three weeks—and that wondrous, complex machine never erred. Yet, because of "Medical Ethics," he heard himself giving this innocent patient the old conversation, professionally used in such unhappy cases: "—everything is all right—" and, "your Life-Lines show a happy future—" and, "—you will be successful—" and, "—happy—" and, "—you should relax and enjoy yourself now that you have your future Life-Lines completed." He also said other things.

CRAIG felt sick. The Predictograph had predicted this little fat man would be killed in three weeks—in an accident! A gyro crash, with fire and an unpleasant death.

Outwardly, Dr. Craig knew he appeared cool and professional. But inwardly, his brain seethed and raged with questions that lashed his conscience.

If only the Supreme Medical Council would permit him to tell this man *not*, on pain of death, to get into any gyro—perhaps this little fat man wouldn't die. But, *Quote:*

"You are forbidden to tell a patient his true future when it is unfortunate."

"You are forbidden!" the Supreme Medical Council said.

Craig gritted his teeth. He knew the Degree of Predictable Life-Lines was the highest medical degree a human could attain. But cases like this made him doubtful that he should have ever worked for his P.L.L.

Why couldn't this be prevented? The question reminded him of what he, himself, was going to do today. He was going to break his oath! He intended to do something that the Supreme Medical Council had said was forbidden! His resolve, like a shot of adrenalin, strengthened him. He would carry out his plan.

He heard his voice speaking.

"Since your charts predict a happy, successful and—" the untrue word almost stuck in his throat, "—long life ahead of you, I suggest, now that your Life-Lines are completed, you go home, forget about your business, and the few little minor troubles I mentioned, and celebrate. You have fulfilled the Galactic Federation requirements by completing your Predictable Life-Lines and you are entitled to throw a real party."

He forced the professional twinkle into his eyes.

"Of course the Predictograph hinted you will have a super-hangover—after your party."

As the little fat man's tension broke and he began to chuckle, Craig nodded.

"You know the machine can't pick up small sensory lines like hangovers," Dr. Craig said. "We can learn only the major facts of your future with the usual possible ten-percent error of course."

He made himself smile.

"So perhaps you won't have a hangover. But if you react to such a splendid report as this, as most of my patients do, then you will throw a real brawl that should give you that super-hangover." He extended his hand. "Good-by! Speak to my secretary, Miss Evans, on your way out about the balance on your account. And congratulations."

The door closed behind the patient. Craig's head dropped. One more hopeless case he had lied to. He sat motionless at his desk. He let the lids close over his eyes, as his broad forehead wrinkled with conflicting thoughts.

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Unpleasant thoughts.

The Predictograph *never* missed! For the trained operator like himself, it picked up everything down to the slightest detail. He shouldn't have worked so long, so hard, to earn his P.L.L. He was beginning to realize he wasn't the psycho-type for this sometimes unhappy business. Patients with happy futures made him happy in turn. But when he diagnosed a future full of heartbreak, he couldn't remain cool and impersonal.

He continued to sit there, thinking of what he intended to do this day. He noticed the palms of his hands were becoming slippery with sweat. He could feel his heart beginning to hammer as if it were terrified. His breathing felt cramped and smothered.

Today was *his* day! He was going to learn his own future. Not in sugar-coated, pink-pill form, with any future horrible happenings omitted. He was going to know his *true* future. If the Supreme Medical Council found out that he was violating his doctor's oath, they would break him without mercy. But if he succeeded with his plan, it would forever guide humanity along paths of happiness undreamed.

HE TRIED to pick up a cigarette. His hands were shaking so badly he had to make three attempts before he got it into his mouth. He puffed it alight. He managed a short laugh. Like all patients about to receive the diagnosis concerning their future life, he was nervous too. And patients were always told nice little "medical white-lies," if their futures were hopelessly unfortunate, instead of the truth.

But if there were bad times ahead of him, he would know them, down to the slightest horrible detail, before this day had crawled by. The cigarette was dry and tasteless.

"Doctor Craig?"

He jumped, startled. A blurred image before him sharpened into focus. It was his secretary, Miss Evans, crisp in her cool white uniform, standing across the desk from him.

"I plugged my call light into your interphone minutes ago," she said. "You didn't answer." She glanced at the brightly glowing signal on the desk, then at the doctor. "Is there anything wrong?"

He shook his head, switched off the light and mashed the life out of the tasteless cigarette.

Miss Evans pressed her lips together. "Electro-Transport just sent over your reservation. Your passage is arranged at Grand Terminus, through Booth Two-Seventeen. You'll be transmitted at Hour Eleven Hundred. Here is your ticket. I got you a round trip." Her voice, usually so impersonal, trembled on the last word. "Can I do anything else, Doctor Craig? Your face is so pale."

"Everything's fine," he mumbled. "After I leave, I want you to check on that last patient. Find out about his family, his insurance and all that. Be discreet of course. He has about three weeks left."

"Oh!" gasped Miss Evans. "Another one?"

"Yes, his lines are very definite. Find the usual angle, if you can, to see that his family gets the medical fee back through some sort of anonymous donation. If the family needs it in your opinion, add a thousand credits."

"But, Doctor Craig!" She hesitated. "You can't afford to keep giving away your money."

"Don't worry, Freckle-nose," he said, uttering the pet name before he thought.

The girl burst into tears. "Oh, Jules," she sobbed. "I know it's still business hours, but I can't stand it any longer." Her brown eyes wet with the long pent-up tears, blinked at him pleadingly. "Please, honey! Can't you tell me? Can't I help you? Why are you going to Mars? I'm so worried about you."

"Freckle-nose!" He moved from behind the desk and pulled her to him. "Don't worry. After today, I promise we'll have a lot of fun together. Just don't worry. That's all I can say until tonight when I return. I've got an idea, and if it works out, it might change the destiny of the human race." He lifted her chin and kissed her on the tip of her freckled nose. He forced his voice to sound cheerful. "You got another freckle there since this time yesterday."

The girl was trembling. She held him tightly a moment, then pushed herself from his arms. She straightened her hair and assumed her secretary manner.

"Right, Doctor Craig. When shall I expect you?"

"That's the girl!" He knuckled her under the chin. "I'll be back late—at about Seventeen Thirty Hours. Wait for me and we'll find a nice noisy spot somewhere, where we can resume our usual discussion about who is going to ask who to marry whom, and when and where. Okay?"

He stepped through the door, picking up his hat in the outer room. A thought swung

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him around.

"When a report is transported from Doctor Praggor concerning a patient named Bradbury, don't file it. I will want to see it first, tonight! It's a special case." He watched the door close slowly, shutting out the framed vision of a freckle-nosed girl in a crisp white uniform watching him with worried eyes.

He took a lift to the roof and signaled a cruising gyrocab. He climbed in, giving the Electro-Transport Grand Terminus address stamped on his reservation. As soon as they were air-borne, the cabbie pulled up to the two thousand-foot level and since traffic was light, they made good time. Below, the city drifted slowly behind like a chessboard of rioting colors, studded with gargantuan chessmen.

CRAIG settled back into the pneumatic seat and tried to relax. His muscles refused to obey. They shrieked their nervous alarm at him now that he was beginning to carry out the long-awaited, final phase of his plan.

There was no turning back. It was too late to hesitate now. His own life, his reputation and perhaps the happiness of countless billions of humans, yet unborn, depended on his courage.

A sickening doubt raced through him. How ironical it would be, if, when he appeared before his old classmate, Dr. William Praggor, P.L.L., presenting again the false name of William Bradbury as he had done three months previously, Praggor should suddenly recognize him as Dr. Jules Craig, P.L.L. Praggor would be compelled to report he had broken his oath! The Supreme Medical Council would be merciless.

If he were recognized, he wouldn't get a chance to finish the last, most important part of the experiment. And this experiment would force him to risk far more than his career—risk his own sanity!

Perhaps Praggor wouldn't recognize him this time either. They had changed during the long busy years since graduation. Praggor had become soft and fat, while he, Craig, still possessed the lean hard body of his youth. But his thick dark hair was graying at the temples. That graduation day had been only eleven years ago.

He remembered the silver-haired speaker, the head doctor whose name he couldn't even recall, walking to the center of the raised platform adjusting his glasses.

"Youngers, I congratulate you. You are about to receive the degree of P.L.L., the most sacred degree ever intrusted to man! The road behind you has been mind-racking. But now you hold in your brains the ability to determine the Predictable Life-Lines of any patient who, having received his order from the Galactic Federation when they have decided his life lines are necessary, will come to you for his diagnosis.

"The Galactic Foundation has its own vast Bureau of Public Records which, in combination with our services, has succeeded in keeping peace in our system for two centuries. Our work is vital to the proper functioning of their methods. But their own investigations are not to be put aside lightly.

"Their departments of mass psychology, propaganda, environmental and racial trends and all the rest of their methods, so necessary to keep a Galactic Empire running smoothly, are at your disposal to make an accurate diagnosis of the particular individual. Where the Federation deals in masses—you in turn have been trained to deal with the individual."

The doctor had paused to clear his throat impressively.

"Youngers—I know all of you have wondered about your own futures," he had continued. "What I am about to say now is such a top-secret matter that it is only revealed at this last moment of graduation. All men want to know their futures. That is their natural right." His voice had become firm. "But when you accept this degree of Doctor of Predictable Life-Lines, you will have forever severed yourself from normal humanity and the right to know your future. You are now declared a breed of man apart. You will never learn your own future. There is a reason for this, and the Galactic Federation is confident you will never cause trouble. No man who has ever stood in this room a Younger and walked out a doctor, has ever violated his oath. You have been investigated far more than you know. But all of you are human."

The speaker softened his voice.

"In a few moments you will be issued your own personal Predictograph. It will be your life-long companion. It is attuned and geared to you personally. It is part of you. While you have been students you worked with standard models to learn their functions.

"But the machine you will receive will be different. Do not think for a moment you can tell your own future with your own Predicto-

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graph. You cannot! It has a built-in principle guarding against that unfortunate possibility should you ever try to violate your oath.

"We have never tried to foretell your futures for you, since once you have worn the Crystaleen amplifier-recorder cell necessary for a Life-Line diagnosis for the required three months, the Supreme Medical Council has decided it upsets the delicate attunement of a Doctor of P.L.L. to his own Predictograph, upsets it to a degree which interferes with accurate diagnosis.

"It is unwise for any man to know his own exact future. Danton Marko, the inventor of the Predictograph, proved that two centuries ago when he diagnosed his own future and went hopelessly insane in three weeks."

THE voice boomed suddenly like the clang of metal upon metal, and gathered itself into a rising crescendo of sound.

"Mankind has enjoyed peace for two centuries. The peace has proven that the Galactic Federation is right in compelling each human to submit, at the proper age of his development, to a Predictable Life-Line diagnosis. Consequently, no single human, has been able to succeed in planning disorder and chaos to a serious degree before being stopped.

"I admit that seems to be a paradox. I admit your logical minds may question this paradox and ask: If a human is forced to have a Life-Line made and his future indicates he is going to try to breed trouble and unrest, he must be executed. This fact will naturally show up in his diagnosis, which immediately must be filed with the Galactic Federation. Therefore, are you, as a doctor of P.L.L., responsible for the man's death, since you revealed he would cause trouble?" He raised his hand as if to stifle any sudden comment.

"It is a puzzling question, Youngers. The same as which was first—the chicken or the egg? There are things concerning the phenomena we deal with which we do not understand as fully as we some day hope to. But you have your sacred trust and obligation to file with the Council and Federation all Life-Lines you diagnose.

"Mankind has had no war for centuries. But mankind's massed life force and intelligence is a terrible, powerful blind energy that could wreck the entire Universe if it were not guided and controlled into the proper channels.

"Isn't it better to sacrifice a few—instead of a billion?" The lines in the lecturer's face became grim. "Youngers, as the years slip by, and you find yourself with a patient whose future is although not dangerous but full of misery and agony—always remember your training and your oath: You are forbidden to tell him his unhappy future and you are forbidden to tamper with your machine to tell your own future. Those are your medical ethics. Younger Praggor, step forward!"

Craig remembered how Praggor had mounted the platform a Younger and stepped down a Doctor, P.L.L. Like himself, minutes later. Eleven years ago. Eleven years of stepping aside and permitting men and women to walk blindly ahead to their doom. Eleven years of lies. Of cheating himself of his own self-respect.

These were some of the reasons he had decided to break his oath! He would make himself a guinea-pig. He would have his own future diagnosed in a way that he would know beyond the shadow of a doubt if he could actually *change* his own Predictable Life-Lines. That was why he had sent Praggor that letter three months ago:

25, Augusti, 243 G. T.
Stanton-Greenstone Center
5th, Wing, 82nd, Level
Greater NYC—EARTH.

TO: Dr. William Praggor, P.L.L.
Manya Clinic
New Paris, MARS

Dear Bill:

Sending you patient, Earthian rank of Younger, Ben Bradbury. Would run case myself but since he is friend, feel he has been too close to me for that. Suggested he see you for more impersonal diagnosis. He will probably request appointment pre-lim consultation within week. Send his charts to my secretary before you file them with Council.

Jules Craig, P.L.L.

He had been nervous, three months ago, when he had presented himself to Praggor's secretary with the false name of Bradbury. He had hoped the report he would turn in would be complete enough that Praggor would not have to go to the Federation's files for more data. If that happened, since the name of Ben Bradbury wouldn't be found in the files, he would be exposed immediately and all chance of making the experiment lost forever to him.

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BUT Praggor's secretary had seemed cold and indifferent, like a machine. And although he had sweated out the fear Praggor would recognize him when he was admitted to the inner office, he saw that Praggor hardly even looked at him. Just another patient. . . .

The sudden whine of the vanes of the gyrocab as it began to drop toward the landing-stage snapped him back to the present, and its new problems. He gradually pulled himself together as he saw Grand Terminus swell and expand in size beneath him. He felt the landing gear bump. He climbed out, paid the cabbie and walked to the information desk presenting his reservation for transport.

In a bored voice, the clerk issued instructions for finding Booth 217. Down the corridor, through the hall, down the lift, and into the booth. The attendant ripped off the receipt, opened the door. Craig entered and sat down in the metal chair. He waited.

His hands still felt wet. He tried to reason with himself that there was no sense in getting nervous now. That could come *after* he diagnosed his own charts.

Distantly, he heard the attendant drone: "Grand Terminus, Earth—calling New Paris, Mars. Reservation Twenty-six B. Doctor Jules Craig, Earthian, awaiting transport, Booth Two-Seventeen to New Paris. Please verify. Over."

The lights inside the booth were bright, hot and dazzling. He could hear the vague hum and whir of the scanners as the invisible technicians adjusted the transmitting beam in relationship to his mass. The spacial chit-chat, with no time lag since it was sub-ether stuff, was incomprehensible to the layman. It continued:

"New Paris, Mars, to Booth Two-Seventeen, Grand Terminus, Earth. Doctor Jules Craig, Earthian, in sync for transport. Will adjust. Over."

Craig felt a tingle sweep through him, and as it continued, he puffed a cigarette alight. He blew a swirling cloud of smoke.

"New Paris to Grand Terminus. Adjustment complete on Two-Seventeen. Go ahead. Over."

Craig tensed himself against the unpleasant sensation of a bad transport. But he felt nothing. He waited until the "All Clear" signal flashed, and stood up. It had been a smooth trip. Even the puff of smoke had come along with him.

He waited half a minute until the lights blinked off and walked through the opposite door. It had been as simple as that. No sensation. Good transport.

The air was thin and cold. His breathing quickened, and since he felt a bit dizzy he made his way slowly to the nearest movewalks. He noticed, however, that he could breathe more easily than the last time he had come to Mars to see Praggor. That meant the Federation, at last, was beginning to get some results with the new oxygen-output machines.

The Manya Clinic swarmed with patients. The lift shot him up to Praggor's office. The waiting room was crowded and the unsmiling secretary took his false name without comment. He found a place to sit, and began to wait.

Irritated, Craig pulled out a cigarette and tried to smoke, but his hands shook so noticeably and the cigarette tasted so muggish, he threw it away.

The waiting was nerve-racking. Good grief! he thought. Is this the refined mental torture all *his* patients went through in his own waiting room? Is this why all his patients were so nervous despite his efforts to assure them worrying wouldn't help things? Is this the way they felt while waiting for his diagnosis—with the mind building up possible or imaginary terrible future happenings?

Craig noticed his hands were sweating more than ever, and furious with himself, he tried to clench them together as if to push the cold, clammy moisture back where it came from. He had never considered this part of a diagnosis so seriously before.

WITHOUT warning, the nasty little thought he had been trying to fight down and out of his consciousness ever since he had started the experiment struck him like a blow from an invisible fist.

"Is this experiment too big for one man, Doctor Craig?"

Would there be an inevitable punishment for trying to tamper with the lines and forces of space and time? Were humans still too small and insignificant and ignorant to try to sway the very basic structure of the entire Universe?

Relentlessly, the long submerged, nasty little voice beat at his brain with questions.

"Suppose, Doctor Jules Craig, by breaking your oath, you learn your future is to be a

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fearsome thing crammed with disease, heartbreak, disfigurement and an early painful death and that it is impossible to change your future? Is that why Marko went mad? Can you keep your own sanity?"

He almost shouted aloud. He realized he was sitting stiff and tense on the edge of his chair. He took a desperate grip on himself and forced his body into a more relaxed pose.

He waited, with the sweat drenching his body.

"Younger Bradbury?" The secretary was calling him.

Wearily, he stood up and walked into the inner office. He saw Praggor sitting behind his desk, fatter than the last time. He wondered if the doctor would recognize him at this last moment.

Praggor didn't. Praggor hardly looked at him as he shuffled charts importantly, looking professional.

"Younger Bradbury, your great day has come. You have finished your P.L.L. Nice report. Notes you supplied my secretary were exact." He looked oddly at Craig. "You know—your reports were almost as complete as if a doctor himself had made them out. Usually it is difficult to convince a patient of the importance of detailing every movement, contact, every bit of food and drink, every thought so as to enable the machine to get the Life-Lines well centered and to wear the Crystaleen Cell at all times. But you followed my instructions perfectly."

Praggor laughed and continued: "Of course your charts have the small error of ten percent which we always have to allow for. Some of your unimportant detail lines are fuzzy."

A blasting fear, like exploding petrol, swept through Craig. Here he was sitting in front of a desk, waiting for a diagnosis, the most important thing in his life—and he had to listen to this kind of rubbish! Error of ten percent? The machine never missed! With the care he had taken, checking his own behavior, he knew he had turned in probably the most accurate report ever filed into any Predictograph. He had wanted to be sure.

He listened, the fear inside of him growing and swelling until it was choking him in the throat, as the doctor spouted off with medical rubbish that sounded like Page 310, of Chapter IV, of Marko's "The Necessity of Telling the Patient What He Wants to Hear."

This was a diagnosis like telling futures with tea-leaves and palm-reading, when he wanted to *know!* And now Praggor was giving him the old stuff about: "—you'll take a nice long trip—" and "make money—nothing to worry about—celebrate—" and the chuckles about, "—a beautiful blond with long legs—"

Praggor wasn't telling him the *truth!* There never would be a blond with long legs. All he wanted was Freckle-nose. Praggor was lying to him! The thought rose up monstrous in his mind. Good heavens! What did it mean?"

"I'll send these charts to Doctor Jules Craig tonight," Praggor was saying. "He will give you additional lines in detail if you should so desire. Don't bankrupt yourself on that celebration. Congratulations. See my secretary about your account on the way out. Goodby."

In a daze he paid his bill, forced himself calmly to go down the lift, onto the movewalks and into the Transport Building.

Dully, he noticed his hands hurt. His fists were clenched, his nails had dug into the flesh, and his palms were bleeding. The spreading flecks of crimson mingled splotchily with the sweat. He should go somewhere and disinfect the wounds.

But that could wait. He had to get back to his office and read the true report. Praggor was probably transporting the charts and diagnosis at this instant.

HE ENTERED Booth 217 and sat down. In minutes now he would know whether his basic theory was correct—that man *could* be master of his own destiny, and *could* change his predicted Life Lines. His theory *had* to be correct!

It was futile and useless to think that man was nothing more than a helpless pawn—with his life laid out from birth until death by some Unknown Great Factor in some Great Unknown Game. That would be a devastating knowledge.

But no! He would learn his own future and change it! Then he would take his evidence to the Supreme Medical Council and prove that mankind could avoid certain unhappy paths of life if warned in advance. Then doctors like himself would be able to lead people along lines to ultimate happiness.

His tension increased as the technicians droned on and on with their adjustments. If only his own future wasn't too bad! If only he could keep his sanity!

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The "All Clear" signal flashed, the lights winked off. He hurried out of the booth and into a gyrocab, up to his office, through the door, and saw Freckle-nose sitting at her desk, calmly powdering her nose.

"Well," she said, wrinkling her nose so the freckles quivered, "you're seven minutes late. Why can't handsome young doctors ever be on time?"

"Sorry," he said breathlessly. "That report on Bradbury. Where is it?"

"Oh—that? It just came through. I put it on your desk. Let it wait until tomorrow. I don't want you to get wrapped up in a P.L.L. diagnosis for hours and hours when we've got a date. I've found a new place to go."

"Sorry, honey," he muttered. "This is important."

He ran into his inner office and ripped open the report.

26, Novemberi, 243 G. T.
Manya Clinic
New Paris, MARS

TO: Dr. Jules Craig, P.L.L.
Stanton-Greenstone Center
5th., Wing, 82nd., Level
Greater NYC—EARTH

Dear Jules:

Thanks for the patient. An interesting, but unfortunate case. Since he was a friend of yours I was extremely careful in the diagnosis.

Younger Bradbury turned in excellent reports. But since I definitely did not like the diagnosis on the first run, I ran it through three times personally, to make sure. Inclosed you will find copies of all three charts. Since this man was a friend of yours I am deeply sorry. I advise you to stay away from him from this moment on.

The energy line, in this patient's case, that I find bewildering is the sudden rise of the mental factor C3. You will notice on Chart II that it rises rapidly up and beyond Marko's Constant with an intensity of 3.017 degrees. I have never been confronted with a case of such extreme mental deterioration in such a short period of time. This man will soon become dangerously insane.

You will see in his charts that from some unknown phobia buried in his own mind that this man is going quickly insane, and in his insanity will unknowingly commit three horrible murders before he is apprehended and executed. And one of these unfortunate murders will be the death of someone very close to him.

Naturally, my medical ethics would not permit me to inform this man of his unhappy destiny. I gave him the usual, routine soothing talk so necessary in sad cases.

In an attempt to account for his sudden mental breakdown, I traced the K4 and K5 lines, the physical and love factors, and found a sharp break which I interpreted as a sudden, unexplainable reversal of feeling, or intention, due to some hidden fear only apparent to himself, toward someone very dear in his emotional background.

However, I don't understand how a physical factor or reversal of feeling, is strong enough to cause such a mental breakdown as indicated. I think these are secondary reactions from some hidden fear or else some sudden unexpected shock. I wish we knew more about this type of case. I wish I could have said something to this patient, but with his tragic future, as you know, it is forbidden.

Be sure to attend the Medical Reunion. Like to see you.

Sincerely, your old classmate,

William Praggor, P.L.L.
Level 186—Bldg. 12
Manya Clinic
New Paris, MARS

Silently, the door opened.

"There you are, reading some of those old charts again." Freckle-nose edged her slim body up on the desk and pulled the charts from his lax fingers. "Tonight is my turn to ask you to marry me—remember?"

"No!" Dr. Craig said in a dull voice, and felt the first part of the phobia steal slyly into his brain.

"You see?" it said mockingly, and hungrily began to eat away at his brain.

William Boyce, in whose veins flows the blood of crusaders, goes on the quest of a lost memory and a mysterious woman in an odd clime where cities move and time stands motionless—in LANDS OF THE EARTHQUAKE, a complete full-length science fiction novel by Henry Kuttner featured in the May issue of our companion magazine

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(Continued from page 9)

and we shall have to follow recent custom by running less per each and more of them.

We're opening off with a couple of widely divergent views on our current policy, which is, in truth, just beginning to shake itself down. First, we'll give ourselves a little moral (?) support with—

PRAISE WHERE PRAISE IS DUE
by Lynn Stanley Cheney

Dear Editor: At last TWS has made an important advance in bettering the quality of the magazine, namely the abolishing of all adolescent speech in The Reader Speaks. The improvement is greatly appreciated and although some die-hards are complaining pay them little heed if you would stay on the right road. One period in the gloomy doldrums of Xeno-talk was enough. Stay on the wagon in order that we readers won't have any more mental hangovers.

As for the stories, many excellent ones have been printed, notably by Henry Kuttner, your finest writer. Four of his better works were "The Dark World", "A God Named Kroo", "I Am Eden" and "Sword of Tomorrow". Continue printing novels of the caliber of the above mentioned and your magazine will remain foremost in the science-fiction field.—*743 Orange Avenue, Yuma, Arizona.*

Well, we seem to be doing all right. Actually, that "adolescent" lingo you used to have nightmares about wore pretty thin—from our point of view at any rate. It was good stuff for a long while—but any gag, and it was a gag, begins to get threadbare with repetition after repetition.

Frankly, we began to long to talk English again—if this is English, so be it!—and find ourselves revelling in same. So it's good to get letters in support of the change. As for the stories—well, we like Kuttner too as a glance back over the contents pages of our issues, recent and otherwise, will reveal.

But there is another side to every picture, so—

A CRIMINAL YET!
by Paul Bergen

Dear Editor: You had something terrific in the Reader's Column, old style. There was never anything like it before. It was a fresh breeze across the aridity of most editorial columns in slicks, pulps, fantasy and SF. TWS was becoming famous, beginning to tower above the competitive group.

But you would not let well enough alone. You had a golden goose that layed golden eggs by the ton. So what did you do? Killed it, that's all. That is to say you modified it, and messed around with it, so that now it is dead. If not quite dead, merely stirring feebly under the electric blanket, and barely existing on spoonfulls of nourishment.

Why did you commit this crime?

Because a lot of readers squawked?

Good grief! Do you think readers know what they really want? If they did, they'd be writers or geniuses. Beefing is normal and acceptable . . . a sign of health, efficiency, high morale.

The spectacle of impudent, irrepressible readers writing corny letters to their Sarge, and getting smacked down in print was the finest and funniest thing since Gutenberg first separated type.

Quick Sarge, the pulmoter. Before it's too late!! Restore the old letters, the old Sarge. The more squawks roll in, the more successful you'll be.

Give us back our old Sarge.—*P. O. Box 216, Clearwater, Fla.*

Well, *frère* Paul, that fresh breeze you mention so blithely in your opening paragraph was growing redolent of old fish, coffee grindings and bits of used grapefruit. And the tower was beginning to sag in a fashion to make Pisa's famed what-is-it look like a plumbline special. We were laying eggs, all right, but they were neither golden nor strictly fresh.

It was at least as much editor's (that's me, *cherie*) as readers' squawks that caused your so-called crime. We notice little change in the impudence of readers' letters (sic) or in our own instinct to pin back the collective ears of the writers. We're just doing it without benefit of that rather shabby hybrid known as space lingo.

THIS BUCKS US NO END
by Charles T. O. Bladon

Dear Editor: The other day I read the Fall issue of TWS and, remembering it from when I was in the States during the war, bought it. The level of the stories was quite good.

THE MULTILLIONTH CHANCE—very good. The cream of the lot. But I still don't think the kettle would freeze.

CALL HIM DEMON—good. But like some of the others it is a bit far-fetched.

POCKET UNIVERSES—very good indeed, but I don't quite see how you remove a thing from the tube when you still have it covered by a piece of suitcase, which came as well, on top.

GOOD EGG—good but a trifle far-fetched.

NEVER THE TWAIN SHALL MEET—very good and quite possible.

THE LITTLE THINGS—I didn't quite understand it but it seemed quite good.

TUBBY, MASTER OF THE ATOM—I can't complain because anything can happen in a dream.

Tell Bergey to keep the cover painting to the point. Since when have she-males taken to wearing tin undies? Besides, it doesn't fit in with the story. It seems to be illustrating one of next month's, or possibly last month's.

Now for an SOS. Wanted—all science fiction stories and books available, except for H. G. Wells and Jules Verne (I can get them here).—*c/o R. C. Martineau Esq., Eton College, Eton, Bucks, England.*

Well, so they are reading science fiction instead of playing on those blasted playing fields at Eton these days! Well, we don't mind if England doesn't. Bladon (I believe first names are out, are they not, at your public school?), you'd better take Leinster's word for it on the removal for nothing, complete with suitcase top, in POCKET UNIVERSES. He is so theoretically ingenious that he'll have thought of some answer even if he is dead wrong—which he usually isn't.

The Fall cover you mention was built around Finlay's illustration for CALL HIM DEMON, which was done in Hawaii during the war and written into the story by the

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author. Anyway, it made intriguing decoration. And those tin undies you mention are probably plastic.

Hope you get some magazines and write us again, please.

TROUBLE IN TWS
by Rex E. Ward

Dear Editor: It's a sunny day here at Thrilling Wonder Country Club; a fine day for golf. Naturally, you're all waiting to hear the results of today's rounds, so yours truly will give you some.

In the fourth bracket, John Russell Fearn came in with a three-over-par 75. John had a bit of trouble today. A bit of a letdown after "The Multillionth Chance." He parred that one.

Also in the fourth bracket, Samuel Mines comes in with a 76, four over par. Sam had a little trouble too.

Tops in the third bracket is Joed Cahill with "The Pleasure Age." A 73, one over. Joed played a nice game, bogied the 16th, but made up for it with a birdie on the last. Good story.

We've just had word that Woodrow Wilson (???) Smith, "Juke-Box", came in with a 72, par, playing a nice game; his putter was hot. Very good little short.

Only one scorer in the second bracket: Edmond Hamilton, probably the finest shooter living, finished with a hot 71, one under. "Come Home From Earth" was really fine short. More . . . .

In the First Bracket! Henry Kuttner with "Trouble on Titan," scores a sizzling 68! four under. First Tony Quade story in a long time, but a plenty good one. Just wish that Art Barnes' Gerry Carlyle was in it more. They are wonderful pair.

By the way, I remember a Gerry Carlyle yarn called "Trouble on Titan" appearing in the February 1941 isue of TWS. What goes here? Anyway, 68 is really hot.

And now folks, we take you down to the 18th green where Mr. Murray Leinster is finishing his round. My assistants inform me that Leinster must shoot a birdie there on this last par four hole if he beats Kuttner. A par will tie.

He's bending over his ball now. Very calm. It looks good, it's rolling slowly though— It rolls up to the lip—stops short— No! It rolled in! Murray Leinster barely edging out Hank Kuttner for first place, shooting a red-hot 67!!

Well, that's it. Keep up the good work; the magazine is improving every issue.—*428 Main Street, El Segundo, California.*

Well, you caught us with our planets down, Rex. The Gerry Carlyle-Hollywood on the Moon novel which led our February, 1941, issue of TWS *was*, merely by curious coincidence, entitled TROUBLE ON TITAN.

Just to add to the confusion, while indulging in the belated research which affirmed your query, we ran across an Ed Hamilton yarn in the 1945 fall issue of STARTLING STORIES, our companion magazine, entitled TROUBLE ON TRITON.

Our head is not bending low—it's bent!

A BUSTER FROM BROWN
by Guerry Campbell Brown

Dear Editor: I've got a gripe. It's about that piece of letter-hack junk I sent in, which was printed in the Fall issue of TWS. I admit, it was pretty bad. I was new in fandom then, and I've learned a lot since then.

But what I didn't expect was your cutting my letter in the present TWS. In it I tried to square myself a little with the other fen. If that's what you call cutting all but the gist of the letter out, TWS is going to become of much poorer quality. I noticed a couple of other fellows got the same treatment.

This issue of TWS was a good deal better than average. None of the stories was really bad, or even mediocre. The best was Joed Cahill's "The Pleasure Age", to my mind, and Leinster's "The Manless Worlds" was a close 2nd. The shorts were the best you've had in a long, long time. Original plots, no corny romance. "Trouble on Titan", although not great, was okay. I believe Kuttner'd do better if he stuck to fantasy.

"The Reader Speaks" was good this issue. The cover was much better than usual. Even if inaccurate. (The story stated that Kathleen did NOT go down to the ship with Quade.) Finlay did a beautiful job on TMW. Marchioni & Morey were not very good. I'd like to see an all-Finlay issue.

Just one more thing. I'm for printing one of the old style hack letters occasionally. Why not have some sort of a contest among the readers as to who could write the best hack letter? This would satisfy those people who liked the old type somewhat. The persons that didn't want to read it could skip over it. —*P. O. Box 1467, Delray Beach, Florida.*

Well, Guerry, if you think we want you chaps (that Eton influence is now infiltrating) to kiss and make up, you're out of your mind. It is arguments that promote better letter columns so we're out to promote feuds whenever possible.

When you want a hack letter contest—oh, my sainted big toe (left)—include us out. We get enough and run enough (yes, still) of the Bemmy things anyway. So crawl back under your stone, at least until letter-writing time comes around again.

JUKE BOX ADDICT
by John W. Patch

Dear Editor: It's not often that I write a "fan" letter—or any other kind. But I feel that I should add my voice to those complimenting you on your change of policy. When I first saw that screwball department you used to run, I wondered what had happened while I was overseas. I thought a bunch of zanies had taken over TWS. Well, that's over with now, so let's forget it— like a bad dream. Now if the stories will show as much improvement—

I rate the Feb. stories in this order:

1. Juke-Box.....Woodrow Wilson Smith
   (Just happens to be the type I like)
2. The Manless Worlds.....Murray Leinster
   (But let's not wear the idea out)
3. Come Home From Earth.....Edmond Hamilton
   (A new idea)
4. The Pleasure Age.....Joed Cahill
   (A bit hacky, but not too bad)
5. Trouble on Titan.....Henry Kuttner
   (A bit too hacky—I was hoping Hollywood-on-the-Moon had been bombed out)
6. Sweet Mystery of Life.....John Russell Fearn
   (Pure hack)
7. A Matter of Size.....Samuel Mines
   (Essence of Hack)

The cover? I guess it's no use, but I'd prefer a little more accuracy. I don't object to the scantily-clad babes, IF THE AUTHOR WROTE THE STORY THAT WAY! But as a space-suit, a bathing suit won't hold air (Joke). The inside illustrations are good—except Marchioni's—but illustrations are a secondary matter. What we want is quality in the stories.

Somehow, neither TWS nor Startling has measured up, during the past year, to my memories of the pre-war issues.—*New Concord, Ohio.*

Well, we try, John, we certainly try. But, please, no cracks about what is paved with good intentions. You doubtless had some when you wrote that thing.

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BLAZE OF GLORY!
by Alvin R. Brown

Dear Editor: Evidently, TWS has started the year 1947 in a blaze of glory. The February, 1947, issue is definitely the finest all-around issue since way back in 1942. Ah! These postwar improvements!

The cover is one of the better efforts from Bergey's paintbrush and for once I will concede that Bergey can be good if he wants to.

Top story in the issue is TROUBLE ON TITAN. I've always enjoyed the Tony Quade series and this is a welcome offering from Kuttner's typewriter. Can it be that the Carlyle-Quade feud will blaze anew in the near future?

Second place is a tie between THE MANLESS WORLDS and THE PLEASURE AGE. Both stories were well done and definitely out of the juvenile class. My, oh my, we are improving, aren't you?

Third place is another tie; this between JUKE BOX and COME HOME FROM EARTH. Both are just what shorts should be, to the point. Very neat.

Fourth place to SWEET MYSTERY OF LIFE. Something seemed to be lacking in this one. Just fair.

Fifth place to the only blot on the issue, A MATTER OF SIZE. For this tie-in, one succulent phooey!

The art I will dismiss with one word. MAGNIFICENT (Oh, to have that Finlay on p. 12). Even Morey was good this time.

The Reader Speaks can now be considered one of the better readers columns in the field today and one of the most pleasurable to read. Permit me one slightly acidulated comment.

My dear Miss Moorehead:

If I am a callow exhibitionist with all the restraint of a young puppy, what in blazes are you? You write a drooling letter too (except for two-bit words). And as for fifty percent of fans, etc., my aching back, woman, they wrote in the same vein the Sarge answered their letters; something like a cesspool flowing into a sewer.

I see that the old guard is back but as a greatly matured and slightly subdued group of letter-hacks. This column now reflects the rise of stf out of the screwball stage.—*139-28-34 Road, Flushing, New York.*

Well, we rather like this blazing business—especially since you have let Frances Moorehead do the burning that seems to have ignited us. More and better feuds, we say, and long may they wave!

SHORT BUT—SWEET?
by Francis M. Beck

Dear Editor: On page 103 (Feb) you say RED. and on page 6 you say BLUE. OH MY!—*19 Miles Standish Road, Schenectady, New York.*

It was not until page 103 that we discovered the office supply force had neglected to lay in a supply of the proverbial editor's blue pencils and that we were performing our routine vivisections in red. Ah, well—accuracy at all cost. Incidentally, how much does a box of blue pencils cost in this inflated era?

ANOTHER BUNDLE FROM BRITAIN
by James Clay

Dear Editor: I've just finished reading the 1946 fall issue of TWS. It is the tops, even better than the last edition, which I read way back in 1940. This is a begging letter. I'm begging any of my fellows readers of TWS or SS who have back numbers to be pals and ease my boredom. If I don't get too many I'll be glad to pay for them.—*38 Oakcroft Road, Lewisham, London, England.*

Okay, fellows, better drop James a line and make a deal. They haven't been getting much STF over there in a long time.

COOKED!
by Michael Cook

Dear Editor: I have just finished reading your February issue, and I hail it as one of the best I have ever read. You may now take a bow.

The Stories—The Manless Worlds—Leinster—95%. A darned good story. I hear there is to be a third tale in this series. I hope it's as good as this one.

Trouble on Titan—Kuttner—80%. I am forced to admit that for once Kuttner has written a good story. This Tony Quade is Kuttner's first lifelike character. Why not tell Henry to stick to Science-fiction, instead of fantasy.

The Pleasure Age—Joed Cahill—98%. This was the best story in the issue, and also one of the best I have ever seen in T.W.S.

A Mater of Size—Mines—.0000001%. Oh Brother!!! UGH!!!

Sweet Mystery of Life—Fearn—55%. Not good, not bad. Fearn can do better than this.

Juke-Box—Woodrow Wilson Smith—.01%. The late President Wilson could have done better than this.

Come Home from Earth—Hamilton—40%. Hamilton is definitely not up to par on this one.

The Pictures:

Cover—50%—Bergy, that water was supposed to be cold. The poor girl must be half frozen.

Pages 11, 13 and 17. This guy Finlay could do a swell job on a 16th. century painting. Note the costumes on page 13—0%.

Page 36, who did this? I couldn't read the signature. Anyway it's awful. Also 0%.

Page 53—UGH!!! 0% also.

Page 59—Marchioni, my favorite artist—80%.

Page 74—Good—70%.

Page 83—Still Good—69%

Page 91—Bad—55%.

THE READER SPEAKS:

Much longer this month, also much better. I close with a final plea to bring back the old SARGE. I am pining away without him.

AH, the old Sarge, the old Sarge,
With all his corny puns,
His alcoholic content large,
And his talk about distant suns,
How I long to have him back
So I could give his skull a good hard crack.
(With a mallet yet!)

I guess this will hold you until the next swing around the Universe.—*34 Jameson Avenue, Toronto, Ontario.*

He thinks 'twill hold us till the next
Swing 'round the universe—
We'd soon forget him and his text
But we just can't be chercy.
So never mind the distant puns,
The heat of space and corny suns,
Friend Cook shall never be our pal
Until he's dipped in alcohol.

TOO MUCH LATITUDE
by William Bender Jr.

Dear Editor: The changing format of "The Reader Speaks" encourages me to write, despite an uncertainty as to whether you welcome criticisms of the type I propose.

I can't claim to be an sf fan, for yours is the only magazine of its type I read consistently. Also, I'm afraid I'd make some unforgiveable blunders in trying to compare one story against another because—with occasional exceptions—I enjoy them all.

However, while the science part of the yarns is generally tolerable, once in awhile Ye Ed and Ye Scribe seem to doze over certain passages. The results, in

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keeping with the title of the publication, are truly "wonderous."

For a case in point: Kuttner, on p.42 of TROUBLE ON TITAN (Feb. TWS), provides us with this oddity: "Equatoria, a continent as large as Africa, stretches from latitudes 45°N to 32° S (on Titan)."

A little hasty research throws a bug into this statement. The polar circumference of Titan is approximately 8,170 miles. Therefore, 4,085 miles would be the distance from pole to pole—a stretch that would be chalked off by 180 degrees of latitude or arc. This, in turn, would make one degree of latitude equal of 22.8 miles. "Equatoria" then turns out to be 77°x22.8 miles or 1,755½ miles long.

The dimensions of Africa, however, approximate 4,970 by 4,700 miles. Twice the size of "Equatoria" and not, as Mr. Kuttner states, equal to it.

I'd like to know what your other readers think of the idea of becoming the informal watchdogs over the accuracy of writers and editors alike? I feel it would be stimulating to have some of the many provocative thoughts in the stories aired and discussed in The Reader Speaks. Readers may often have specific contributions to make which would support or refute various points in the stories.

Criticism, it is hoped, would tend to be constructive and cordial to prevent spooking the writers out of the usual spontaneity with which they provide so much enjoyable reading in each issue of TWS.—*1139 Euclid Avenue, Boulder, Colorado.*

A very constructive letter, bub, but we always thought Euclid Avenue was in Cleveland, and who would want to be a carbon copy of that? Also, we think you have a narsty literal mind.

LEERY OF SNEARY
by Rick Sneary

Dear Editor: I just got the Feb. TWS and was horrified to see your new policy. On reading my first thought was, "the Sarge has cut his own throat." I thought you wanted a good Readers Speeks. If you call the stack of hafe baked letters "perfectly readable" I'll eat a green BEM. Of the 34 letters only 10 weer worth reading. (And I'm claseing my letter, and my pal VanCouvering with the ones that weren't to interesting.) Of thos 10, two were pro writers, two were big name fan writers. That lives 6 from the average fans that I'found worth reading.

What in the name of Foo do you think you are doing. How can any one say anything of interest to other fans in such a short space. Why I'd reather read a *good* letter, of 500 words by some one like Oliver or Kinnedy, or any good writer than one of my own. Oh I like to see my name in print, but I want to get there becase what I have to say is of interest to other fans.

And you surely couldn't call the Lee, Talbot, Brown letters interesting. They had ten lines of print between them. And then thos two Bemlin letters. I thought you weren't going to have any more of that stuff? If you must print all these names, why not do it like the old SFL list, just the name and address. In small print. It would ego boo your readers and live room for the more interesting letters. I'd rather see a few long letters than a lot of cut up short ones.

Bergey has turned out a nother good cover. As long as he keeps his colors subdewed I'll not kick. Glad to see Finlay back, if only three pics. Your lucky. So are we.—*2962 Santa Ana st., South Gate, Calif.*

Well, Rick, we didn't do a thing to your letter. It's printed just the way you wrote it.

CASEY WITH THE HEAT
by Casey Kennedy

Dear Editor: Today is Friday the thirteenth. Since it is bad luck I have decided to wish a little of it on you. You lucky man you. You now have another Kennedy to plague you. Now that you are aware of your good fortune leave us disect the fiction in the February issue of TWS. On the whole it was pretty good but some of the shorts were awful.

1. The Pleasure Age, Joed Cahill. This is the best novelet I have read in a long time. Give it ten and may we have many more like it.

2. Second goes of course to Leinster's "The Manless Worlds" with nine. I would have given it first but the plot seemed just a little bit vague to me.

3. Third goes to "Trouble on Titan". Give this seven. I did not like the plot too well.

4. The only short worth rating was Hamilton's "Come Home from Earth" which is worth four because he is usually much better. The rest of the corn should have stayed in the can.

Finlay had the only good illos as far as the artwork is concerned. Marchioni is lucky that .38 cal. bullets are still scarce. "Bruiser" Bergey and his (predominately) blue blotch have hit a new low. As usual the cover did not follow the story (what can you expect from a Venusian BEM). the gal was supposed to be holding his hand, NOT placidly drifting up at strict attention. Now that that is attended to I have an idea. If ya wanna know what it is, just read the next paragraph.

Since the Sarge got on the wagon there has been very little action in THE READER SPEAKS. Why? The gang misses the kidding, the cracks and JoKE so why not start, as some of the gang has already suggested, a few arguments on some of the theories and ideas expressed in the stories. In another STF mag I read (no it is not as good as TWS) this is done with great success in their reader's column, the result being a good argument almost every issue. They, the ed., run an article and sometimes the controversy is on this. Other times it is on anything from the chemical composition of chalk to an elaborate theory about space and time warps. In the midst of the fracas are guys like the infamous Edwin Sigler and Jack Murell, especially the former, who like to take apart a theory molecule by molecule. If we were to try this it might liven things up a bit and everybody would have some fun. I have to sign off now so so long till next time.—*425 East 86 Street, New York 28, New York.*

Well, Casey, we still stand ready to kid the proverbial long, red five-way-stretch drawers off anyone brash enough to submit us a letter. But if your brother I take it the famous Joke is some sort of a distant (?) relative, or does he spell it Kinnedy as Sneary would have it?) does not choose to honor us with his indentured stationery, we'll have to be contented with the Casey variety.

Why don't you start things off for us by taking your own molecules by molecules apart? The result should be edifying to say the very least. No action, huh—!

EBEY JEEBIES AGAIN
by George Ebey

Dear Editor: TWS, February 1947:

Did somebody say there were too many silly letters appearing in *The Reader Speaks?*

In the lead story of the February issue Leinster described a spaceship which was (and I quote): "a matter-transmitter which received itself." Beautiful!

In "A Matter of Size" by Samuel Mines the author describes a "pocket-sized cyclotron" (again I quote) which makes medium-sized professors out of short professors and tall professors.

In the novelet "The Pleasure Age" by Joed Cahill the hero saves the world by rocketing to Venus to trap mosquitoes. And the moral of the story is summed up by said hero when he says; (yes, I'm again quoting) "What the world needs is about ten billion mosquitoes. . ." Presumably to keep humanity on the move? Cahill, the philosopher!

In the story by John Russell Fearn, "Sweet Mystery of Life", a botantist hatches a girl in his greenhouse (quote): "a woman who thrived on fertilizers. . ." (But it's scientific, see, because she really developed from an Arrhenius spore.)

In "Juke Box" by Woodrow Wilson Smith a man

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falls in love with a juke box—or vice versa. Excerpt quote: "He swigged his drink and smoothed the juke box's flanks. . ." His favorite number must have been "To Each His Own."

Now some of this may have been intended as humor and, me, I like humor. Some of it may have been meant to be vaguely scientific and, I have nothing against science. But the cumulative effect of all this guff is to turn a respectable magazine into a comic book, pure and simple; very simple. This February issue was full of the silliest excuses for reading matter I have ever come across, in six years of constant reading. Sarge: read the ish yourself and see if you dont agree.—*4766 Reinhardt Drive, Oakland, California.*

Why don't you crawl back under some convenient stone and indulge in a permanent hunger strike? We read the ish and can't agree. If we did we should hardly be among those present, although we have heard rumors that this is a moot question likewise.

EXCELSIOR—HUH?
by Marion E. Zimmer

Dear Editor: Your policy of improvement, I see, has finally spread to the cover. The one on the February issue of TWS (how do you do it, time machine?) really shows Bergey's value as an artist.

The inside was good, as usual. Since you no longer enjoy a monthly Xeno Saturnalia, your reader's department has improved 100 per cent. I heartily approve of your change in letter policy. However, please don't lose your friendly touch.

The stories were a fine lot this time. "The Manless Worlds" was the best of the novelets, especially the "Time-Transmitter" idea. It was something almost new.

Then, expecting great things, I came to the Kuttner story. Halfway thru, incredulous, I wondered—can this be KUTTNER? Ganelon's Ghost! After "The Dark World" and "I Am Eden", it's sacrilege. If someone else had written it, I'd have liked it, but Kuttner can do much, much better.

"The Pleasure Age" wasn't very original but it was well told. I liked it, though it's tough on homo sapiens.

Your shorts were a much better lot than I've seen yet. Even "The Juke Box", easily the worst story in the issue, was above the mongoloid line. "Ah, Sweet Mystery of Life" was *really* unique.

I predict that "Come Home From Earth" will make the S. S. Hall of Fame in about 1950. This is certainly super-science-fantasy at its best. I know now why Ed Hamilton is the patron saint of all fandom.

Science Fiction is really on the upgrade now and only the lurid covers and defunct space-talk have kept it down.

Are you growing musical? "Juke Box" and "Sweet Mystery of Life" in the same issue!

Excelsior!—*RFD No. 1, East Greenbush, New York.*

If we were you, Marion (should we or should we not consider that possibility without tremors?) we should not overfret ourselves anent Kuttner. Henry the Only is too darned prolific and too darned good to invite it. Thanks on the whole for a very nice epistle. Incidentally, we agree on the Hamilton classic.

JACKPOT FROM JONES
by Alan Jones

Dear Editor: Egad, have you hit the jackpot! The whole ish was good and then some. Well, almost all of it.

The best in the ish was THE MANLESS WORLDS by Leinster. I can hardly wait till the third of the set is published. This is the best writing I have seen by Leinster. Second was THE PLEASURE AGE, by

[*Turn page*]

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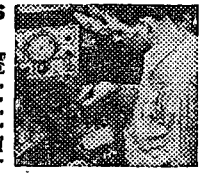

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Joed Cahill. This is the first thing I have ever read by Cahill, and it leaves me with a good impression of him. Is he old guard, or a newcomer?

Next comes COME HOME FROM EARTH, by Hamilton. It was well-written and had a good plot. I especially liked the nostalgic quality Ed managed to instill. It's rare to get sentiment into a story without overdoing it or almost excluding it, but this hit me just right. Written in somewhat the same mood as FORGOTTEN WORLD.

Then there is TROUBLE ON TITAN. For an average writer, this would be very good stuff, but I thing you'll agree Kuttner isn't just an average writer. This was good, but not his best. Smacks of thud and blunder.

SWEET MYSTERY OF LIFE was a better than average short, well written and plotted. 'Nuff said.

JUKE-BOX was interesting a little, but the ending was awful. Or I'm just thick. (No snickers from the rear ranks.) What ever became of Foster? Did the juke-box kill him, or did the creatures chasing him around do it? Or maybe did he excape? Anyway, it's a neat plug for Tin Pan Alley.

Last of all is A MATTER OF SIZE. This is another of those attempted humorous stories that have plagued your pages of late. Have you tried DDT yet?

THE READER SPEAKS had some interesting comments, but there aren't any feuds at all. The best letter was by Chad Oliver.—*1242 Prairie, Lawrence, Kansas.*

Let's see, Alan. Cahill is new as far as we know. And to date he has not followed up his opening opus—which was very good in our not-so-humble opinion. It seemed to us that the ending of JUKE-BOX was clear enough for the most pea-souped mentality. You might try memorizing the last line and letting it settle gradually—or why not just forget the whole thing?

We have a DDT bomb handy, but are reserving it for truly dire emergencies.

MIXED GRILL
by Frank Reginald

Dear Editor: This is the first letter I've ever written to a promag, so I guess I'd better not do too much rambling over the entire page. *C'est assez de dire* that the February issue of ye old rag, *Thrilling Wonder Stories,* was on the average, far better than previous copies. Everything, including the art. That is, excluding Marchioni's *messterpieces.*

Leinster's *Manless Worlds* was excellent; Kuttner's *Trouble on Titan* was good but seemed to revert to Hamilton's space opera style; *The Pleasure Age,* by Joed Cahill (Is it a he, or a she?) was interesting but I'm getting sick of these cases where you fill the book with stories of one type only. Cahill's story wouldn't have been so bad had it not been included in the same issue with Leinster's. Among the short fellows *A Matter of Size* was amusing, but that's all. And what happened to the illustrations on this story? Fearn's *Sweet Mystery of Life* confirms my belief that Fearn is or was a botanist. The story wasn't good nor bad. Just so-so. *Juke-Box* could easily be classed as a classic. It had that sohardtodefine twist in it. Give Mr. Smith a big glass of water. (Xeno's gone).

And to finish the magazine, Ed Hamilton chimes in with another of his standard plots. If he would really work out his stories and make them long-novel length, he would be a much better author than he is now. But now he is turning out more stuff than Burroughs and Haggard combined ever wrote. The letter section was interesting without being especially meritous. Bergey's cover painting is very good. In a soft light it can easily be mistaken for a photograph.—*115 Aycock, Chapel Hill, N. C.*

Well, Frank, you with the two first names, *nous sommes très heureux* to you hear from. Your comment on the similarity in theme of the two novelets causes us to indulge in a mild wince and shudder. But they weren't *that* close, really they weren't.

Your remarks on the photographic effect of Bergey's submarine cover give us a mild start. Should we decide to indulge in such literal whimsy, what in the name of your pal, Ghu, would we do about BEMs? Readers, please elucidate.

HOUSE OF BURGESS
by Fred Ross Burgess

Dear Editor: I notice that we few remaining hacks will be wiped out when any *hack* appears in our letters. That's all right with me. I never could see the point in hacking out tons and tons of tripe. Of course it was fun, and it was one way to kill time, but the war is over, the vets are back, and, at least in college, most of them are pretty serious minded fellows.

I took a little time off this evening to ingage in an interesting discussion on the infinity of space and, later, to read Murray Leinster's "Manless Worlds." I found Murray's story interesting, but I must say that it did seem a trifle short, and that there were several semantic meanings that confused me no end. I won't bother to mention them now, but a cursory glance through the story is enough to reveal them. Another point that I have found interesting in these stories is, in what point of space does the First and Second Galaxy exist. The only galactic map I have, which shows a diameter of roughly two million light years, has no galaxies close enough apart to be considered First and Second. Messier 33 and I. C. 1613 are located roughly two hundred thousand light years apart but Messier 32, Andromeda, and N. G. C. 205 are only a few thousand light years further than this distance. What I want to know is, although it is thoroughly irrevelent to the story, what part of space are the two galaxies located in?

By the way, if anyone ever tries to tell you that fen are of a lower class of mentality than normals, tell them of two who won scholarships. (I'm referring to the Pesi scholarships). Lionel Inman and myself. And these tests definately took a higher mentality to even place anywhere near the top.

This afternoon a very interesting discussion took place in my room. My roommate, Jack McDuffie, who is working on a paper for his philosophy course, had to write on the problems of finite and infinite space. Here are a couple of the arguments: If space is finite there is a definate center. But if space is infinite then any point can be considered the center.

Now my solution is that in an infinite space every point may be considered the center and that an infinite number of points can be the center at any given time. The line of thought is contained in relativity. Any point may be considered the center of space that is relative to it. There is a fallacy in this but it is enough to start discussion here in the READER SPEAKS. Good's theory is that if space is curved it is finite, for if space is curved, you would reach the point of origin should you attempt to follow a straight line. Therefore, because you returned to the original point, space is finite. This can be worked out in Arisfotelian Logic as:

All (that in which you will return to the point of origin if you travel in a straight line) < (finite)
[the symbol "<" is used to express "is included in the class of."]
All (space) < (that in which you will return to the point of origin if you travel in a straight line)
All (space) < (finite) [Valid syllogism, AAA1]

Hypothetical syllogisms can also be worked out from this original argument, but as the syllogism above stands, the argument that space is finite is a valid syllogism. (It is necessary to bear in mind that a syllogism can be valid and at the same time contain the fallacy "hypothesis Contrary to Fact."

But enough of that. My logic lessons are no matter to discuss in a letter to a prozine.

One interesting note about the letter section. Everyone almost, gave the story, "Never The Twain Shall Meet," a high rating. There were a number of glowing errors in that story and I was certainly surprised to find that nobody noticed them. The first was apparent

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in the illustration. *"Swerve westward," he cried.* Great Ghu! Out in space which direction IS west? Secondly: Yleen was switched from negative to positive. If so, how could she have lived on Mars. The very air she breathed would be negative and chaos would result. The only way one negative person could possibly be converted into positive matter would be for the entire planet to be converted. See what I mean. And don't tell me that no one noticed that sterling (That's a play on words, son) mistake.—*115 Aycock (UNC) Chapel Hill, No. Carolina.*

Okay, okay, Fred Ross. Your Hamilton beef does make sense in a negative sort of a way. Congratulations to Inman and yourself on the scholarships. And we quite agree on your theory of the infinity of foci in infinite space.

It is the same sort of theory which allows, say, a ceiling to be divided into four, eight, sixteen or so on halves—each eighth being half of a quarter and so on. But that way madness lies. Incidentally, there is, it seems to us, a large fallacy in the hypothesis which suggests that any curvature of space necessarily means one must ultimately return to his starting spot. Or did Good find himself unable to conceive of the spiral.

As for the galactic location of Kim Rendell's various systems, we can but suggest that you go to your nearest filling station and acquire a new 1947 model space map. People who seek to pin down the flights of sound creative fancy a la Leinster are asking for hummings in the ears.

[*Turn page*]

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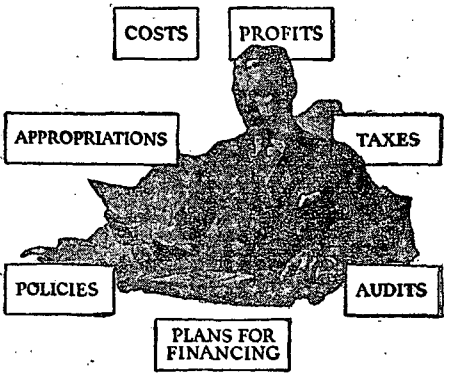

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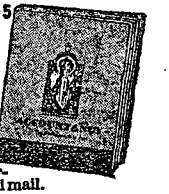

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WORK *IS* A NAUGHTY WORD
by Jimmy Wheaton

Dear Editor: The February TWS was okay generally, Sarge, but I don't think it had anything outstanding in it. The covers are generally improving, even this one. Though somehow the shape of the girl doesn't seem quite right to me, the painting itself was pretty good, especially the background. By the way, on page 45 it says that the girl inflated "both of the suits" with oxygen, but the girl on the cover doesn't have much of a suit on.

THE MANLESS WORLDS was a good sequel to DISCIPLINARY CIRCUIT. That part where the ship goes on transmitter-drive for five minutes and really gets away from things makes you think about the real size of the Universe.

TROUBLE ON TITAN was okay but nothing to rave about certainly. Titling an STF story is a cinch; all you do is think of the name of some satellite of a planet and then think of a word that rhymes with it. Such as "Horror on Hyperion," "Danger on Dione," "Gore Galore on Ganymede," etc.

THE PLEASURE AGE had the best idea behind it, I think. That business about the naughty word "work" was thought provoking. Very good.

All the shorts (stories, that is) were pretty sad. JUKE-BOX was the only one that had any good qualities to offer, and those were the different style of writing and the plot. The idea behind COME HOME TO EARTH was good but the story flopped miserably in the last six paragraphs. I should think that Hamilton could find some better way to end his story.—*32 Montclair Avenue, Verona, New Jersey.*

As for the cover-brevity of the gal's suit in the February issue, we can only say, "Praise Allah!" Your title scheme has its points, however—why not RUEFUL ROGUE ON RIGEL? Okay?

MERE BAGATELLE
by L. M. Gould

Dear Editor: About a week ago some copies of the Fall edition of TWS arrived in this (to you) out-of-the-way part of the world and, as until then I had read nothing more up-to-date than 1939, I dived into it. In my opinion TWS has lost nothing during the war years. In fact, THE MULTILLIONTH CHANCE has few superiors in my reading experience.

The other stories were good except for CALL HIM DEMON and TUBBY, MASTER OF THE ATOM, which had no place in an stf magazine. Incidentally Ray Cummings used to write good yarns and if this is an example of his postwar efforts—well, he ought to be thrown into Jupiter's red spot. The cover was good from an artistic (?) point of view but for an stf mag it was just putrid.

I mean to obtain your next issue somehow as I think Henry Kuttner is—or rather *was* in 1939—a magnificent stf author.—*Glenmore, Bagatelle, St. Saviours, Jersey Channel Isles, England.*

We're sorry you didn't care for CALL HIM DEMON, which is one of our all-time favorites. But Kuttner is still magnificent—or possibly even a little more so. At any rate, thanks for a nice note, young man.

WE WONDER WHAT BECAME OF JEKYLL
by Gene A. Hyde

Dear Editor: I just picked up the latest ish of TWS and I must say it was swell. The first purpose of this letter is to add my vote to the growing list of thankful readers who approve of the change in THE READER SPEAKS. I can foresee only a bright future for you—and also some really interesting arguments about interesting things instead of the moth-eaten one about should we should, or should we

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shouldn't have pin-up pictures on the covers. But enough of this.

The second purpose of this letter is to let you know what I think of the stories in this ish. So here goes: *The Manless Worlds* was interesting. Leinster did quite well on this follow-up.

Unfortunately I missed out on the first Tony Quade story. I hope it was better than *Trouble on Titan*. Now don't jump down my neck you Kuttner fans. I like him too, but not this story.

The Pleasure Age was also good. The mosquitoes saved it.

And now we come to the short stories. *A Matter of Size* was good as funny sf stories go. Most of them go O. K. with me, except when I come to a Tubby, etc. yarn. How could you do that to anybody!

Sweet Mystery was fair. *Come Home From Earth* was good, and offers a base for some of those interesting arguments I spoke of before. Question: Are our minds and bodies two different entities? I would like to argue the point with someone, taking the affirmative side if possible.

Juke-Box was excellent. The whole idea was quite original, except the men from Mars.

The third and final purpose of this letter is to ask a question. I have noticed that several fans have asked you about sending in some original yarns. Your answer is always the same and I quote, "send them in", unquote. But, Sarge, you never say where we should send them, or in what form they should be sent. How about a little information on this subject?—*400 E. Eight St., Beardstown, Ill.*

This is asking for it, Gene, but send your stories (if any) to THE EDITOR, THRILLING WONDER STORIES, 10 East 40th Street, New York 16, New York. And don't forget to enclose a stamped return envelope just in case the worst occurs. We hope to

[*Turn page*]

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have rented an abandoned bomb shelter far from the madding crowd by the time this letter sees print.

OUT OF THE WOODS
by Kevin H. Woods

Dear Editor: I have long been a fan of THRILLING WONDER STORIES and have been a science fiction reader since I was fifteen (I am now twenty-three). I like everything about TWS (and this ain't flannel!) including THE READER SPEAKS, although I feel rather out of things, being so many thousands of miles away. However, it is good to know that others think along the same lines I do. I get very annoyed with people who smile smugly and say, "Impossible" or "Ridiculous!"

I have just been able—after scouting the newsstands for miles around—to get hold of the fall issue of TWS for this year and it was grand. Which brings me to the main issue.

I have recently been released from the RAF, after returning from abroad, and since coming home I find that a science fiction ma. is almost unheard of. My old dealer says he has not seen one for ages. Would it be possible to send me any issues of TWS or SS for the last two years or so? And are subscriptions to your magazines possible now? I should very much like to receive them.—*90 Albert Road, Ilford, Essex, England.*

Okay, Kevin, subscriptions are possible—you'll find the terms printed at the bottom of our contents page. STARTLING STORIES, our companion magazine, is also available at the same rate.

BLESSED(?) EVENT
by Guy Gluckman

Dear Editor: Before I get started—I'd like to say that the reason I have not written to you before (although I have been reading your magazine and SS for about a year and a half and CF long before that) is that I have waited 'til I obtained a typewriter. At last this great event has occurred!!

First, the cover on the Feb. ish of TW was absolutely out of this world. I think Earl Bergey is terrific. How about seeing something by E. B. on the inside?

Your idea of more and shorter letters is one of the best since the eradication of Xeno and Co., especially since it may help me to get part of this missive printed.

It seems to me that there are fast becoming two general types of S-F. Instead of defining them I will give two recent examples in your magazine. One is the *Disciplinary Circuit* by Leinster. The other is *Call Him Demon* by Hammond. However, technically there is only one type of science-fiction. This is the latter. Regardless of the fact that *Call Him Demon* was either a good or bad story it still is NOT science-fiction. It is fantasy with a new twist. If the readers of your magazine enjoy fantasy, as they seem to, then by all means give it to them, but as for me, give me S-F (and Murray Leinster) or give me nothing.—*3333 Berkeley Avenue, Cleveland Heights 18, Ohio.*

You sound like the sort of person who insists upon things being logical. Well, thanks for your opinion, anyway!

GENTLEMAN FROM GEORGIA—AVENUE
by Marvin Maxwell

Dear Editor: I have a complant. Not the old complaint about the cover, interior pics, untrimmed edges or your lovable personality, but a new and en-

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tirely different complant. Perhaps I'm different from the rest of the people who read TWS, but when I read something, I like to know what's going on. I am of course referring to the readers speak (I make it plural because I'm sure that there is more than one reader, even if you arn't) section. To illustrate my complant I would like to quote from a leter by Jimmy Wheaton. in one part of his leter he says, "THE LITTLE THINGS. Knuttner does it again. Where he. . . ."

From the general wording I know that he is referring to a story, but what story. Just giving the name doesn't help much when you red the story a few months ago. Since he liked it, and quite a few other people liked it too, I start to wonder weather I liked it. So, I go into the back room and start rumaging around for the correct issue. And when I do find it, It turns out that I don't like it.

This problem could be solved easily enough if you would publish a short snyopus of the storys that are mentioned in the collumn at the beginning of it. I'm sure that mony other readers who don't have perfect memories would apperciate it, because from a good snyposus, you usually can rember the story.

This wasn't a bad issue, but it could have been a lot better. I liked "Juke-Box" by Smith quite a lot.—*3325 Georgia Avenue, N.W., Washington 10, D. C.*

Why don't you purchase a copy of Dr. Adler's HOW TO READ A BOOK—and include a portable pocket speller while you're at it, Marvin. Incidentally, what in hades is a snyposus?

CONNERED!
by Wilkie Conner

Dear Editor: I was really pleased with Murray Leinster's "*The Manless Worlds*" and Joed Cahill's "The Pleasure Age." Both were really great yarns.

Kuttner, as usual, was fine in his "Hollywood-on-the-Moon" story. I remember when the first H-O-M story came out. That's how long I've been liking Kuttner. Kuttner was good when he was writing for certain other magazines, too, but I feel that his best work has appeared in TWS and SS. I am anxiously looking forward to his "Way of The Gods". It appears, from your blurbs, to be the type of story that has made Hank what he is to-day: the undisputed leader of the science fiction and fantasy field.

I am glad that someone agrees with me on Lovecraft. How he got his morbid monstrosities in print, I'll never know.—*Box No. 2392 West Gastonia, North Carolina.*

Are there other magazines, Wilkie?

HOWL OF PROTEST
by Charles Douglass

Dear Editor: The time has come to let forth a howl of protest. The cause of this outburst are the novels that appear in your mag. Why in the name of nine little planets do authors try to enlarge a short story into a novelet. Do you pay them by the word or something? But really, is the art of writing a swiftly moving story that comes to a slam-bang finish a lost art as far as SF writers are concerned.

Now we come to the stories in the February issue of TWS, pretty good on the whole.

1. The Manless Worlds—Murray Leinster. A good SF story with many a twist in the plot. B.

2. Trouble on Titan—Henry Kuttner, Good reading, shows a good imagination, the only trouble is that he should use more of it. C.

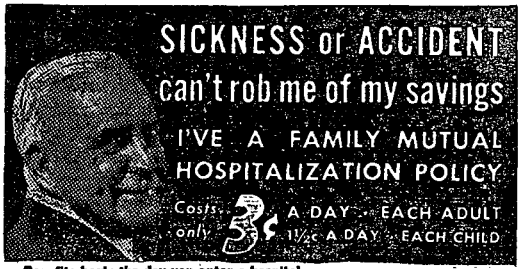
3. The Pleasure Age—Joed Cahill. Good reading, and good SF. Best Novelet I have read in a long time. A.

4-5. This pair will make a nice addition to any slightly worn trash basket. E-D.

6. Juke-Box—W. W. Smith. A good idea but too many details in it. The effect is not good. D.

7. Come Home From Earth—Edmond Hamilton. A real SF story, that belongs among the best. A.

[*Turn page*]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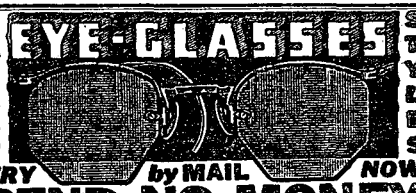
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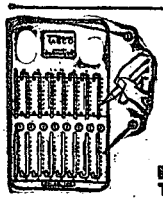

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DEALERS WRITE

Grade for the entire mag. C.—*1236 Crittenden St. N.W., Washington 11, D. C.*

So we only rate a third group in your variable list, Charles. Too bad, but we expect to survive and, ultimately, to make steps in the right direction for improvement. Whoever it was back there that had the gall to remark that any direction was bound to be an improvement is going to be sorry. Yes, sirreeee.

MIGODSKY!
by Michael Wigodsky

Dear Editor: In regard to the February issue of Thrilling Wonder Stories, I congratulate you. I rate the stories as follows: THE MANLESS WORLDS, wonderful; TROUBLE ON TITAN, all right; THE JUKE-BOX, so-so; COME HOME FROM EARTH, PLEASURE AGE, the best ever; A MATTER OF SIZE, so-so; SWEET MYSTERY OF LIFE, so-so; nonsense.

Illustrations: 11, good; 13, very good; 17, not too good; 36-37, good; 53, terrible; 59, terrible; 74, terrible; 83, terrible; 91, terrible.

Letters: Hurrah for Oliver!—*San Antonio, Texas.*

Well, we like everything but your views on the illustrations. And there we fear we have to draw the line.

NEXT WEEK—EAST LIN
by Lin Carter

Dear Editor: First off, leave me congratulate you on an excellent cover. Bergey has done it at last! Swell colors; no violent reds, yellows, or purples—just a nice nauseating green. Yeah.

I am very disappointed in Leinster. He *can* do better stuff than this. I hope. Even the swell pix by Finlay didn't help. Give Murray a sharp rap across the knuckles, and let him try again.

Trouble on Titan, on the other hand, was very good. It causes a warm glow of pleasure to seep through my manly form. Maybe . . . maybe we'll have Tony Quade as a regular feature, from now on, huh?

Humor is a very difficult topic to handle in stef, but *The Pleasure Age; Juke-Box;* and *A Matter of Size* were very well handled! Congrats and stuff to Messrs. Smith, Cahill, and Mines.

Ed Hamilton rings the bell again with *Come Home From Earth.* As usual. Hamilton is one of your top writers, Sarge, hang on to him. Let him try his hand at a novelet, soon. *Very soon.*

The other short was fair, but somehow . . . well—weak. Old-timer Fearn can—and has—done better stuff than this.

And now we turn our dainty feet in the general direction of The Reader Gibbers. Quite a good one this time, too! Quite a line-up, what with Oliver, Jewett, Pace, Sneary, Berry . . . well, well! This policy-changing of yours, Sarge, has certainly raised quite a fuss!

I'm beginning to think that perhaps it was a good idea, after all. Although it does destroy much of the humor and individualism of your column, it does mature the mag, in general. Time will tell. The squealer!—*865—20th Ave. So., St. Petersburg 6, Fla.*

Odd, we thought Leinster's THE MANLESS WORLDS a very good story indeed—but then, if everyone agreed on everything the world would be indeed a dull place. Hamilton is momentarily bogged down with one of those long jobs for SS, but he is apt to turn up with a novelet any time. For both of our sakes I hope he does heed your suggestion.

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TWERP SLURP
by Redd Boggs

Dear Editor: In the interests of brevity. . . .
TWS (Feb. '47)—Leinster laudable, Kuttner corney, Mines—mur-*dur!* Fearn fine, Cahill cuckoo, Smith so-so, Hamilton hokay, TWS tolerable.—*2215 Benjamin Street N.E., Minneapolis 13, Minn.*

Boggs groggy!

REACTIONARY
by Bob Crawford

Dear Editor: The Feb. Reader Speaks indicates that the readers, in the majority, advocate the much discussed change in policy (namely that of polishing off the Xeno and Sarge's little Bemlins. I, personally, do not approve of this step.
Several years ago, when I first developed the habit of reading stf mags, I made a practice of reading all the letter columns. During the following years, these have narrowed down to two—SS and TWS. The reason for their supremacy, was, as I recall them, that they were highly entertaining.
It is, of course, only right to give the new system a fair trial. But I can't help wondering just what The Reader Speaks will be like when the hue and cry following the alteration has died down. Will it be better, or worse?
In spite of (or because of, if you prefer) The Reader Speaks, the Feb. ish of TWS was exceptionally good, there being only one story I would class as "poor"—"A Matter of Size".
I was delighted to see "The Manless Worlds", since I have been gnawing my fingernails waiting for a sequal to "The Disciplinary Circuit".
There is nothing left to say except that after every war there are many reform and uplift movements. Some are good. Some are bad.—*15 North Fourth Street, Alhambra, California.*

Sorry you don't care for our new set-up. Actually, Bob, it more or less had to happen that way. You can't go on forever with the same old gag. Even the best of them wears thin in time.

OSCAR FOR OMAR
by Norman Spiere

Dear Editor: My thanks to your magazine for the many hours of thrilling enjoyment that it has so graciously given to me.
In my life there have been specifically four things that have alleviated the tedium of a very monotonous existence. Namely: the cinemas, the Public Library, the radio, and this magazine and it's companions-in-theme.
The cinemas at times have boring programs, interesting books have to be painstakingly gleaned from the small and conservative library, and the radio offerings—like the cinema's—consists in a series of simple tautologies having as their *points d'apuis* hackneyed formula handed down from the time of the Greek amphitheatres.
But the SF Magazine—Ah! There is one of the most important discoveries of my life in the field of self-amusement. True, it has its faults too. But being a true lover of Scientifiction more than compensates for any of them.
Incidentally, in reading the story "Juke-Box" in the latest issue of TWS (a very good one, by the way) I came across a statement that attributed the line "Every man kills the thing he loves" to Omar Khayyam. I had always thought that it was originated by Oscar Wilde? Am I mistaken?
Also, I would like to correspond with anyone who is seriously interesting in the phenomenon of hyp-

[*Turn page*]

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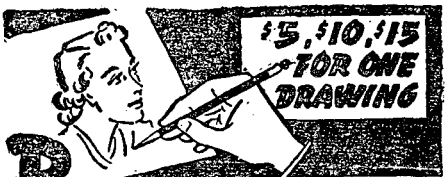

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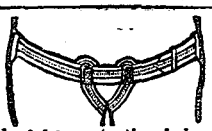

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nosis and or the science of Yoga.—*343 Madison Ave., Perth Amboy, N. J.*

Actually, according to Bartlett's FAMILIAR QUOTATIONS, the quotation reads: "Yet each man kills the thing he loves. . . ."

It *was* written by Oscar Wilde and comes from his "The Ballad of Reading Gaol". As to how it was so badly snafued in the Smith story, we can only plead utter ignorance. At any rate, that's how it should have been—and wasn't.

DE REVERE'S RIDE
by Bradford De Revere

Dear Editor: This time a short takes first place! Edmond Hamilton's "Come Home from Earth" rates the over used but nevertheless appropriate adjective, classic! As are most of Hamilton's stories, this was well written and thought provoking; The 'Hall of Fame' in *Startling Stories* must use this!

Next comes Fearn's 'Sweet Mystery of Life!' A masterpiece by a master of stf! I think his "Multillionth Chance" was so far the best I've read in TWS, tho' it had some close rivals for this honor.

Pleasure Age wasn't bad, but I hate Utopia Tales! Guess others won't agree with me, but I don't think they belong in TWS! However, this was good compared with some.

Leinster's Manless Worlds wasn't too good, but Leinster is another master of STF so keep his stories coming!

A Matter Of Size—fair.

Trouble On Titan—a let down from last issue's Kuttner tale! And tell Kuttner to stick with fantasy pliz, STF is not his meat!

Juke Box—you call *that* science fiction?

Illustrations: The 3 Finlay masterpieces were of course superb! The worst illus was on page 83! Was the guy on the far right Marchioni himself?

Cover: Bergey is really going places! Greater than the Fall cover! I don't see why people criticise your covers, just look at certain other STF mags, and they'll see how good Bergey really is! And what's wrong with Lovecraft?—*356 St. Paul's Avenue, Stapleton 4, Staten Island, New York, N. Y.*

Too many adjectives, Brad, too many adjectives.

Well, that brings us to the end of another session—on the whole, rather a pleasant one, we feel. Keep the letters coming to THE EDITOR, Thrilling Wonder Stories, 10 East 40th Street, New York 16, N. Y. It's a lot more fun than writing your Congressman.

—THE EDITOR.

COMING NEXT ISSUE

•

IN THE CARDS

By

GEORGE O. SMITH

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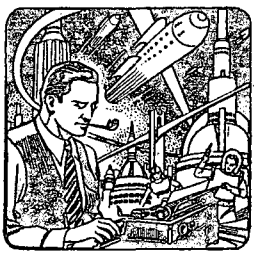
THE STORY BEHIND THE STORY

WELL, Murray Leinster, who is certainly no stranger to most of you, is a person of decidedly liberal social ideas—ideas which he has not hesitated to voice in



his stories—and especially in THE BOOMERANG CIRCUIT, last of the Kim Rendell trilogy.

Here Mr. Leinster gives you the low-down on how his thinking got into the particular richly loded vein that has produced such a magnificent trio of short novels. Murray Leinster, take it away!

In this novelette, like the other two *("The Disciplinary Circuit"* and *"The Manless Worlds")* I was trying to work out the consequences of mechanical means of government. It would, uncontrolled, lead to tyranny. It would, uncontrolled, lead to war. But the whole progress of civilization has been a succession of tamings of previously dangerous things. Wild animals and fire were the first two conquests. We have in the immediate future the need to tame the fissionable neuclei of various explodable elements. But there is a bigger job still. To tame machines.

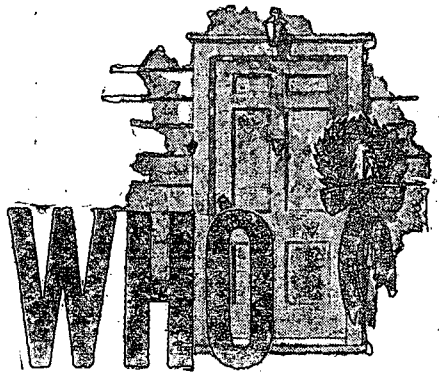
In the three novelets I've been talking about a machine which takes over most of the functions of government—practically all of its coercive or executive functions. Such a machine, without controls, would be just as dangerous as a chain-reaction. That, I tried to make clear.

In this story, to me the most important event is the dropping of those little cases of apparatus on the worlds that tried to wipe out Ades—and, of course, the arrangement that they shall become articles of commerce. They will leave the governments of their worlds with full power to deal with individual criminals, but no power at all to oppress groups. Full authority for government, but none for oppression.

That limitation not only will be needed in the future, but it's badly needed right now in some parts of the world. Maybe these three novelets will start somebody thinking.

In much lighter form, Hudson Hastings

[*Turn page*]



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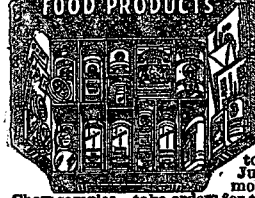

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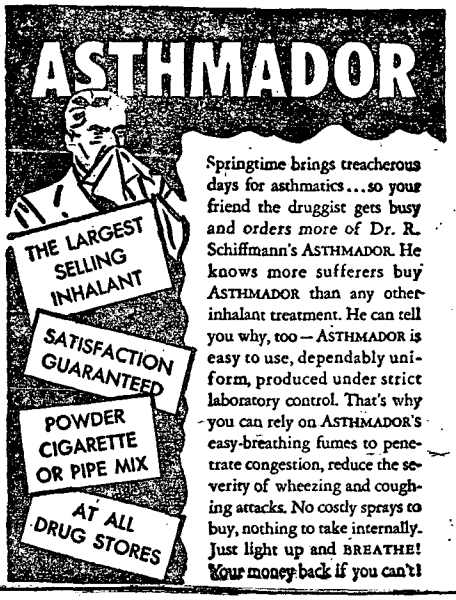
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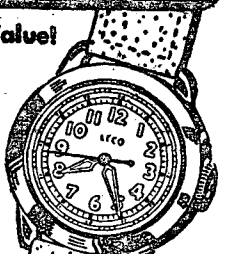

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now takes the floor to reveal the inside of how THE BIG NIGHT came to be written. Hudson is one of those annoying persons who has the knack of belittling anything that savors of hard work and pretending it is easy. 'Tain't so, Hasty, 'tain't so.

The inside dope on THE BIG NIGHT is that I suddenly realized I hadn't written an interplanetary story for years. Okay, I said—and sat down at the typewriter and looked blankly into space. There wasn't any story. The trouble with doing an interplanetary yarn, as far as I'm concerned, is that it's apt to be just that and nothing more. And the fact that a vessel can travel between planets or stars isn't intrinsically interesting. The first few stories involving such traffic were, just as the Nautilus was one of the first and therefore one of the most interesting submarines. Still, today a spaceship is old stuff.

"Look," I said to myself, "maybe you better write a story about a giant amoeba, kid."

"I won't," I said stubbornly. "I hate giant amoebas. I'm going to write an interplanetary. I *want* to."

"Suit yourself," I agreed—I always indulge him anyway. "But you'd better think of something. You need a *story*. Suppose when this here guy gets to Venus he finds a beautiful princess about to be married to the High Chief Octopus of the wicked Cephalopodians—"

"Shut up," I said.

Then I looked at the typewriter again. I pulled an idea out of it.

If there's going to be a first spaceship, obviously there'll have to be a last one too—eventually. Moreover, it's pretty apparent that people are what make a story interesting. People who run spaceships for a living won't be quite ordinary people. They'll have a different philosophy and psychology. Only certain types of guys will get into the game in the first place. And space travel will have its effect on them. Heredity—plus environment.

So, in the end, the interplanetary angle rather took a back place. It was the initial premise, the springboard. But after I'd started, I was intrigued by the natural developments, technological, sociological and psychological, that would occur after a practical commercial space-route has been established.

Guess that's all. Hope the readers like the yarn!

Everybody just loves your story, Hasty, old man. But you've had your say and it is time for that inveterate vivisector of hillbilly geniuses, William Fitzgerald, to take the floor. It's all yours, Bill. . . .

Bud Gregory fascinates me. Somewhere, there's somebody like him in some fashion or another. I've seen what you might call embryo Bud Gregorys more than once. I've seen people who could make much better mousetraps than average, and nobody paid any attention, much less beat a path to their door. Somewhere, the answers to an awful lot of problems either rest or lie latent in some human skull, and it will be

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only luck if they're pried out.

The fact is that the ability to think and the desire to think and accomplish things are only rarely joined together. Most of us know plenty of people who want very desperately to do great things and simply haven't got the equipment. But some of us, too, know people who have got the equipment and simply don't bother. Their superior equipment simply enables them to loaf more and have a better time generally. That's Bud Gregory—drat him!

I suppose that what I have to say about the whole thing is simply, "Have you a little Bud Gregory in your home?" Somebody has!

THE NAMELESS SOMETHING

(Concluded from page 81)

Gregory's device and packed it in a car, the same car in which he'd been taken to the hideout. And he drove Bud Gregory down to Los Angeles, where he intended to try to get passage back to Washington. People were flocking back to the cities everywhere, then, and police were regulating the flow of returning refugees.

Murfree's captured car was stopped, and three policemen advanced to give him instructions about the route he should take. And Bud Gregory couldn't face three cops. He jumped out of the car and ran away into the thick of the mob of cars and pedestrians streaming back into the city.

Murfree couldn't have caught him. He didn't try, because he was trying so hard to rescue Bud Gregory's gadget, which Bud had used as a stepping-stone when he scrambled out of the car. Those are the two things that make Murfree mad. Bud Gregory fled and could not possibly be found. And his device was smashed so it wouldn't work any more.

Murfree still has it, of course, but he's lost all hope of understanding it. In fact, whenever he thinks about Bud Gregory he begins to swear. He envies Bud Gregory. Because Bud Gregory is something there isn't any word for.

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MONEY ISN'T EVERYTHING—

(OR IS IT?)

BY GROUCHO MARX

WHAT do you want to save up a lot of money for? You'll never need the stuff.

Why, just think of all the wonderful, wonderful things you can do *without* money. Things like—well, things like—

On second thought, you'd better keep on saving, chum. Otherwise you're licked.

For instance, how are you ever going to build

that Little Dream House, without a trunk full of moolah? You think the carpenters are going to work free? Or the plumbers? Or the architects? Not those lads. They've been around. They're no dopes.

And how are you going to send that kid of yours to college, without the folding stuff?

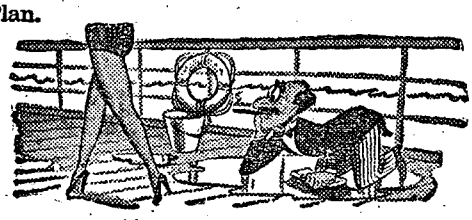
Maybe you think he can work his way through by playing the flute.

If so, you're crazy. (Only three students have ever worked their way through college by playing the flute. And they had to stop eating for four years.)

And how are you going to do that world-traveling you've always wanted to do? Maybe you think you can stoke your way across, or scrub decks. Well, that's no good. I've tried it. It interferes with shipboard romances.

So—all seriousness aside—you'd better keep on saving, pal.

Obviously the best way is by continuing to buy U. S. Savings Bonds—through the Payroll Plan.



They're safe and sound. Old Uncle Sam *personally* guarantees your investment. And he never fobbed off a bum I.O.U. on *anybody*.

You get four bucks back for every three you put in. And that ain't hay, alfalfa, or any other field-grown product.

Millions of Americans—smart cookies all—have found the Payroll Plan the easiest and best way to save.

So stick with the Payroll Plan, son—and you can't lose.

SAVE THE EASY WAY... BUY YOUR BONDS THROUGH PAYROLL SAVINGS

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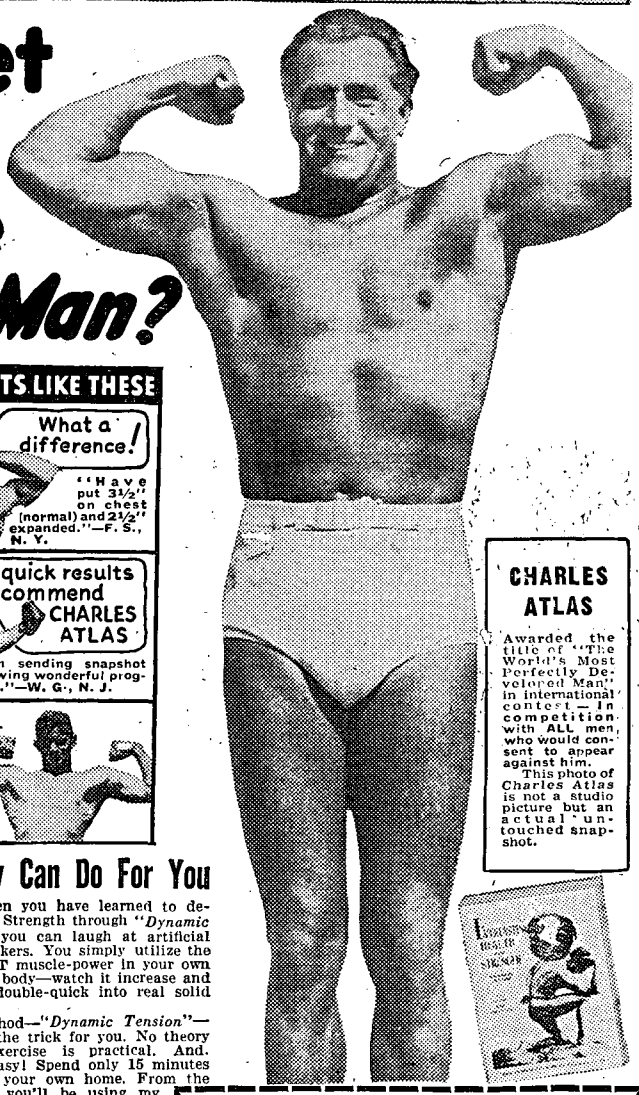
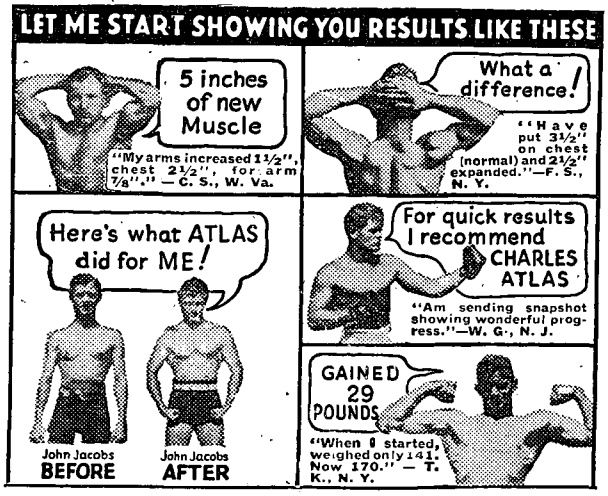
Will You Let Me PROVE I Can Make YOU a *New Man?*




LET ME START SHOWING YOU RESULTS LIKE THESE
5 inches of new Muscle
"My arms increased 1½", chest 2½", forearm ⅞"." — C. S., W. Va.
What a difference!
"Have put 3½" on chest (normal) and 2½" expanded."—F. S., N. Y.
Here's what ATLAS did for ME!
John Jacobs BEFORE
John Jacobs AFTER
For quick results I recommend CHARLES ATLAS
"Am sending snapshot showing wonderful progress."—W. G., N. J.
GAINED 29 POUNDS
"When I started, weighed only 141. Now 170." — T. K., N. Y.

CHARLES ATLAS

Awarded the title of "The World's Most Perfectly Developed Man" in international contest — in competition with ALL men who would consent to appear against him.

This photo of Charles Atlas is not a studio picture but an actual untouched snapshot.

Here's What Only 15 Minutes a Day Can Do For You

I DON'T care how old or young you are, or how ashamed of your present physical condition you may be. If you can simply raise your arm and flex it I can add SOLID MUSCLE to your biceps—yes, on each arm—in double-quick time! Only 15 minutes a day—right in your own home—is all the time I ask of you! And there's no cost if I fail.

I can broaden your shoulders, strengthen your back, develop your whole muscular system INSIDE and OUTSIDE! I can add inches to your chest, give you a vise-like grip, make those legs of yours lithe and powerful. I can shoot new strength into your old backbone, exercise those inner organs, help you cram your body so full of pep, vigor and red-blooded vitality that you won't feel there's even "standing room" left for weakness and that lazy feeling! Before I get through with you I'll have your whole frame "measured" to a nice, new beautiful suit of muscle!

What's My Secret?

"*Dynamic Tension!*" That's the ticket! The identical natural method that I myself developed to change my body from the scrawny, skinny-chested weakling I was at 17 to my present super-man physique! Thousands of other fellows are becoming marvelous physical specimens—my way. I give you no gadgets or contraptions to fool with. When you have learned to develop your Strength through "*Dynamic Tension*" you can laugh at artificial muscle-makers. You simply utilize the DORMANT muscle-power in your own God-given body—watch it increase and multiply double-quick into real solid MUSCLE.

My method—"*Dynamic Tension*"—will turn the trick for you. No theory—every exercise is practical. And, man, so easy! Spend only 15 minutes a day in your own home. From the very start you'll be using my method of "*Dynamic Tension*" almost unconsciously every minute of the day—walking, bending over, etc.—to BUILD MUSCLE and VITALITY.

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In it I talk to you in straight-from-the-shoulder language. Packed with inspirational pictures of myself and pupils—fellows who became NEW MEN in strength, my way. Let me show you what I helped THEM do. See what I can do for YOU! For a real thrill, send for this book today. AT ONCE. CHARLES ATLAS, Dept. 476, 115 East 23rd St., New York 10, N. Y.

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I want the proof that your system of "*Dynamic Tension*" will help make a New Man of me—give me a healthy, husky body and big muscular development. Send me your free book, "Everlasting Health and Strength."

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